ISS Expeditions 16 through 20: Chemical Analysis Results for Potable Water

John E. Straub II [1], Debrah K. Plumlee[2], and John R. Schultz [3]
Wyle Integrated Science & Engineering Group, Houston, Texas, 77058

During the 2-year span from Expedition 16 through Expedition 20, the chemical quality of the potable water onboard the International Space Station (ISS) was verified safe for crew consumption through the return and chemical analysis of archival water samples by the Water and Food Analytical Laboratory (WAFAL) at Johnson Space Center (JSC). Reclaimed cabin humidity condensate and Russian ground-supplied water were the principal sources of potable water for Expeditions 16 through 18. During Expedition 18 the U.S. water processor assembly was delivered, installed, and tested during a 90-day checkout period. Beginning with Expedition 19, U.S. potable water recovered from a combined waste stream of humidity condensate and pretreated urine was also available for ISS crew use. A total of 74 potable water samples were collected using U.S. sampling hardware during Expeditions 16 through 20 and returned on both Shuttle and Soyuz vehicles. The results of JSC chemical analyses of these ISS potable water samples are presented in this paper. Eight potable water samples collected in flight with Russian hardware were also received for analysis, as well as 5 preflight samples of Rodnik potable water delivered to ISS on Russian Progress vehicles 28 to 34. Analytical results for these additional potable water samples are also reported and discussed.

Nomenclature

CE	Capillary Electrophoresis
CWC	Contingency Water Container, 44L
DAI	Direct Aqueous Injection
DWEL	Drinking Water Exposure Limit
EDV	Russian Bladder Tank for Water, 22L
EMU	Extravehicular Mobility Unit
EPA	Environmental Protection Agency
GC/MS	Gas Chromatography/Mass Spectrometry
GSE	Ground Service Equipment
HA	Health Advisory
IC	Ion Chromatography
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ID	Identification
ISE	Ion Selective Electrode
ISS	International Space Station
JSC	Johnson Space Center
LC	Liquid Chromatography
LCV	Leuco Crystal Violet
MCL	Maximum Contaminant Level
MORD	Medical Operations Requirements Document
N/A	Not Applicable
NA	Not Analyzed
NASA	National Aeronautics & Space Administration
NTU	Nephelometric Turbidity Unit

[1] Senior Engineer, Water and Food Analytical Laboratory, NASA Johnson Space Center, Mail Stop: Wyle/HEF/37A.
[2] Senior Scientist, Water and Food Analytical Laboratory, NASA Johnson Space Center, Mail Stop: Wyle/HEF/37A.
[3] Senior Supervisor, Water and Food Analytical Laboratory, NASA Johnson Space Center, Mail Stop: Wyle/HEF/37A.

OGS Oxygen Generation System
PWD Potable Water Dispenser
PWR Payload Water Reservoir
RSA Russian Space Agency
SM Service Module
SRV-K System for Regeneration of Condensate Water
SVO-ZV System for Water Storage and Dispensing
SWEG Spacecraft Water Exposure Guideline
TDS Total Dissolved Solids
THM Trihalomethanes
TOCA Total Organic Carbon Analyzer
U.S. United States
UPA Urine Processor Assembly
UV/VIS Ultraviolet/Visible
WAFAL Water and Food Analytical Laboratory
WPA Water Processor Assembly
WRS Water Recovery System

Introduction

Throughout the nearly 10-year period that crews have lived on the International Space Station (ISS) the onboard potable water supplies have been verified chemically safe for crew consumption through the return and ground-based chemical analyses of archival potable water samples at the Johnson Space Center's (JSC) Water and Food Analytical Laboratory (WAFAL). Once the samples arrive at JSC, allocation is performed in the WAFAL based upon return sample volume. The samples collected into U.S. 1-L Teflon® sample bags usually contain sufficient sample volume (> 500 mL) to support full chemical characterization using the standard and custom analytical methods described in Table 1.

Table 1. Water Analytical Methods

Parameter	Method
pH & conductivity	Potentiometric
Total Dissolved Solids	Gravimetric
Turbidity	Nephelometric
Iodine & iodide	Leuco crystal violet (LCV)
Fluoride	Ion selective electrode (ISE)
Metals/Minerals	Inductively coupled plasma-mass spectrometry (ICP/MS)
Inorganic anions & cations	Ion chromatography (IC)
Total organic carbon (TOC)	Ultraviolet or heated persulfate oxidation
Alcohols & glycols	Direct Injection gas chromatography/mass spectrometry (GC/MS)
Volatile organics	GC/MS with a purge & trap concentrator (EPA method 524.2)
Semi-volatile organics	GC/MS after liquid/liquid extraction (modified EPA method 625)
Organic acids & amines	Capillary electrophoresis (CE)
Urea/Caprolactam	Liquid chromatography (LC) with UV diode array detector
Formaldehyde	GC/MS after derivatization & extraction

Return sample volumes of less than 500 mL necessitate elimination of some analyses and/or reductions in sensitivity of those analyses that are performed. As a part of data analysis and reporting, the analytical results for each sample are compared as appropriate against either the Russian Segment potable water quality requirements found in the ISS Medical Operations Requirement Document (MORD)[1] or the U.S. Segment potable water quality requirements found in the system specification for the ISS.[2] Chemical analysis results for samples collected during Expeditions 1 through 15 have been previously reported.[3-9] This paper presents and discusses the analytical results from chemical analyses of the archival potable water samples that were collected and returned during Expeditions 16 through 20, as detailed in Table 2. Please note that only chemical findings are discussed in this paper, as the extensive microbiological monitoring of the ISS water supplies is the responsibility of the JSC Microbiology Laboratory.

Table 2. Summary of Water Samples Collected & Received during Expeditions 16 through 20

Expedition	Flight No.	Samples Received	Sample Type	Sample Collection Date	Sample Receipt Date
16	STS-122/1E	1	Rodnik Tank in-flight	02/13/08	02/21/08
		3	SRV-K Warm	11/30/07, 01/08 & 02/04/08	
		2	SVO-ZV	11/30/07 & 01/08/08	
	Subtotal:	6			
	STS-123/1JA	1	SRV-K Hot	02/26/08	03/28/08
		1	SVO-ZV	02/26/08	
	Subtotal	2			
	Total:	8			
17	Soyuz 15	1	Rodnik Tank in-flight	04/16/08	05/02/08
		1	SRV-K Hot	04/16/08	
		1	SRV-K Warm	04/16/08	
		1	SVO-ZV	04/16/08	
	Subtotal:	4			
	STS-124/1J	1	SRV-K Hot	05/30/08	06/16/08
		1	SRV-K Warm	04/13/08	
		2	SVO-ZV	04/13 & 05/30/08	
	Subtotal:	4			
	Soyuz 16	1	SRV-K Hot	08/27/08	12/08/08
		1	SRV-K Warm	08/27/08	
		1	SVO-ZV	10/21/08	
	Subtotal:	3			
	Total:	11			
18	STS-126/ULF2	2	SRV-K Hot	07/25 & 10/08/08	12/02/08
		3	SRV-K Warm	07/02, 09/01 & 11/11/08	
		5	SVO-ZV	07/02, 07/25, 09/01, 10/08 & 11/11/08	
		1	PWD Aux Port	11/26/08	
		4	WPA RIP	11/22, 11/25 & 11/26/08	
	Subtotal:	15			
	STS-119/15A	2	SRV-K Hot	12/16/08 & 2/19/09	03/30/09
		1	SRV-K Warm	01/12/09	
		3	SVO-ZV	12/16/08, 01/12 & 02/19/09	
		1	PWD Aux Port	03/25/09	
		6	PWD Ambient	01/02, 01/14, 01/21, 01/30, 03/18 & 3/25/09	
		5	PWD Hot	12/12,12/19 &12/29/08, 01/30 & 3/23/09	
		6	WPA RIP	12/08/08, 02/09, 02/27, 03/10 & 3/25/09	
	Subtotal:	24			
	Soyuz 17	1	SVO-ZV	04/05/09	06/15/09
		1	PWD Ambient	04/02/09	
		1	WPA RIP	04/02/09	04/19/09
	Subtotal:	3			
	Total:	42			
20	STS-127/2JA	2	SRV-K Hot	05/04 & 7/22/09	08/03/09
		2	SRV-K Warm	04/09 & 07/07/09	
		4	SVO-ZV	04/09, 05/04, 07/07 & 07/22/09	
		4	PWD Ambient	04/15, 05/4, 06/16 & 07/24/09	
		2	PWD Hot	06/16 & 07/24/09	
	Subtotal:	14			
	STS-128/17A	1	SRV-K Warm	08/04/09	09/14/09
		1	SVO-ZV	08/04/09	
		1	PWD Ambient	08/04/09	
		1	PWD Hot	08/04/09	
	Subtotal:	4			
	Soyuz 18	1	SVO-ZV	09/22/09	10/21/09
		1	PWD Ambient	09/22/09	
		1	PWD Hot	09/22/09	
	Subtotal:	3			
	Total:	21			
Progress	28	1	Rodnik Tank (GSE)	12/14/07	01/29/08
	29	1	Rodnik Tank (GSE)	03/26/08	04/28/08
	30	1	Rodnik Tank (GSE)	07/10/08	09/03/08
	31	1	Rodnik Tank (GSE)	10/09/08	12/08/08
	34	1	Rodnik Tank (GSE)	05/21/09	09/02/09
	Total:	5			

Background

Onboard the ISS there are 4 different sources of potable water that are available to the crew: Shuttle-transferred water, Russian ground-supplied water, Russian reclaimed water, and U.S. regenerated potable water. The ISS crews have access to these potable water supplies via the Russian and U.S. Segment water systems. During periods when the Shuttle docks with the ISS, Shuttle potable water can be transferred to the ISS in contingency water containers (CWC's). Iodine is removed from the Shuttle water and minerals in the form of formate salts and silver biocide are added during the filling of each CWC to be transferred to the station. This Shuttle-transferred potable water can be safely stored for up to 1 year onboard ISS before use.

Russian Segment Water Systems

Russian ground-supplied potable water is periodically stored in two 210-liter Rodnik tanks and launched on the Progress vehicle for delivery to the ISS. Silver biocide is added to the Rodnik water during preflight ground processing. During Expeditions 16-20, the Progress vehicles 28, 29, 30, 31, and 34 delivered Rodnik potable water to the ISS. Either Rodnik water or Shuttle-transferred potable water can serve as the water supply for the Russian Segment stored potable water system or SVO-ZV. The SVO-ZV system is comprised of a 22-liter bladder tank (EDV) containing stored water that is connected to a manual air pump for pressurization of the bladder, along with a dispenser for crew access. Atmospheric humidity condensate is recovered from cabin air and processed into potable water in the Russian Segment condensate water regeneration system or SRV-K. Both the SVO-ZV and SRV-K water systems have been previously described in detail.[3-9]

U.S. Segment Water Recovery System

During Expedition 18 a new source of potable water was introduced to the ISS, namely U.S regenerated water. The U.S. segment water recovery system (WRS) that was delivered on STS-126/ULF2 is designed to process urine and humidity condensate into potable water and is a key system required for supporting ISS 6-crew operations. The WRS includes the urine processor assembly (UPA), the water processor assembly (WPA), a potable water bus, and a potable water dispenser (PWD). Figure 1 is a diagram showing the interaction of the various WRS components and the various potable water users including the crew. The UPA processes pretreated urine by a distillation process and delivers urine distillate to a wastewater tank where it is combined with humidity condensate. The WPA processes the combined wastewater to potable water using adsorption/ion exchange and thermal catalytic oxidation methods, adds iodine biocide, and then stores the product water for delivery to the potable water bus. The PWD receives WPA water directly from the potable bus and dispenses either hot or ambient water for crew purposes, while removing the iodine biocide at the point of use.

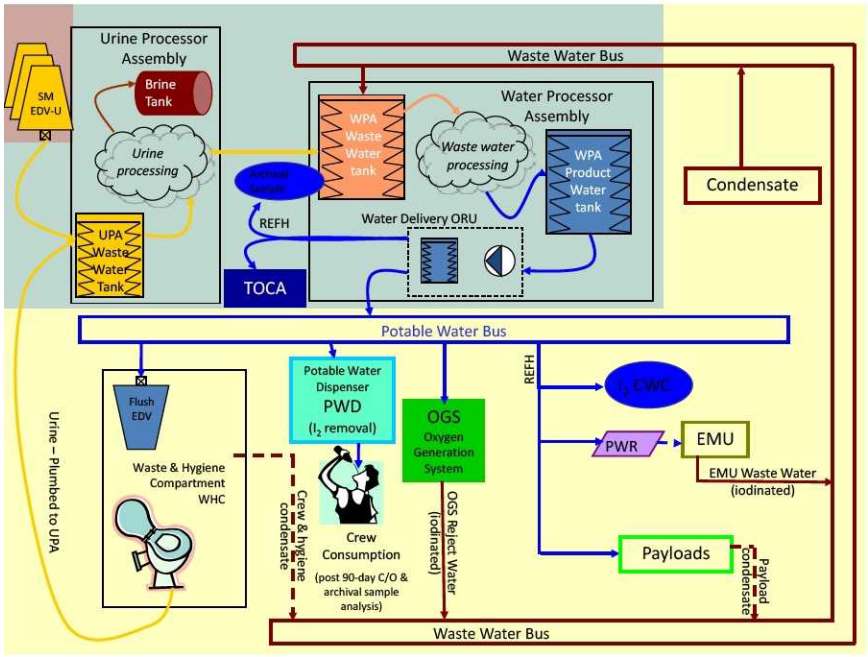

Figure 1. U.S. Segment Water Recovery System Diagram (courtesy of T. McCoy NASA/JSC)

WRS 90-Day Checkout

Despite extensive ground testing of the WRS components, stakeholders decided that it would be prudent to conduct an on-orbit "checkout" period where water quality from the fully integrated water system could be further confirmed before use. It was agreed that this checkout time would cover at least 90 days of WRS operation, and that the crew would not consume the water produced during this period. The WRS was delivered on STS-126/ ULF2 and began processing condensate and urine distillate in November of 2008. In addition to in-flight analyses, archival water samples were collected by the Expedition 18 crew and returned to the JSC for comprehensive chemical analysis in the WAFAL. The results from the chemical analysis of these 90-day checkout samples, which are discussed in detail later in this paper, were ultimately used to confirm the water produced by the WRS was acceptable for crew consumption beginning in May of 2009.

Discussion of Analytical Results

Results from chemical analyses of the SRV-K (regenerated) and SVO-ZV (stored) archival water samples are summarized in tabular form in Appendices 1 and 2, respectively. Preflight samples were collected of ground-supplied water that was loaded in the Rodnik tanks of the Progress 28, 29, 30, 31, and 34 vehicles and later delivered to ISS. Portions of these preflight samples and of two in-flight Rodnik tank samples collected during Expeditions 16 and 17 were received from the Russian side for analysis. Results from analyses of these ISS ground-supplied water samples are summarized in Appendix 3. Finally, the analytical results for the U.S. WPA archival potable water samples collected during Expeditions 16-20 are summarized in Appendix 4.

EXPEDITION 16

A total of 7 chemical archival potable water samples, including 3 SRV-K warm, 1 SRV-K hot, and 3 SVO-ZV, were collected by the Expedition 16 crew as detailed in Table 2. These samples were taken during sampling sessions on November 30, 2007, January 8, 2008, February 4, 2008, and February 26, 2008 and returned on STS-122 (1E) and STS-123 (1JA). All of the samples were collected in U.S. 1-liter Teflon® water sample bags that were received in the WAFAL on February 21, 2008 and March 28, 2008. All but one sample had sufficient sample volume to support full chemical characterization per Table 1. There was insufficient sample volume to analyze for total dissolved solids in the SRV-K hot sample.

SRV-K Potable Water Samples

All chemical parameters measured for the 4 SRV-K potable water samples were within the ISS MORD potable water quality requirements except for slightly elevated manganese in the sample collected on February 4. Although the manganese level of 56 µg/L is slightly over the ISS MORD limit of 50 µg/L, it is not a crew health concern as it is well below a recently developed Spacecraft Water Exposure Guideline (SWEG) of 300 µg/L for this contaminant.[10] The TOC levels of the SRV-K samples ranged from 0.27 to 7.82 mg/L. The formate level of 29.1 mg/L in the SRV-K sample collected November 30 accounted for 7.6 mg/L of the 7.82 mg/L TOC. The high percentage of formate indicates that Shuttle-transferred CWC potable water was being used as make-up water at the time the sample was taken, as minerals are added as formate salts. An updated historical plot of the TOC trend in the SRV-K water samples is shown in Fig. 2. With the exception of the sample collected on January 8 with a silver level of 245 mg/L, the silver biocide level continued to be low, i.e., 22, 33, and 62 µg/L. These low levels indicate that heating of the water by the SRV-K galley pasteurization unit continued to be the main source of microbial control. The nickel levels in the SRV-K samples ranged from 30 to 46 µg/L and were well within specifications (Fig. 3).

SVO-ZV Potable Water Samples

All chemical parameters measured for the 3 SVO-ZV water samples were within the ISS MORD requirements except for turbidity, total silver, and manganese. Updated historical plots for manganese, turbidity, total and colloidal silver ($Ag_{colloidal} = Ag_{total} - Ag_{dissolved}$), and formate in SVO-ZV samples are presented in Fig. 4 and Fig. 5. Turbidity ranged from 2.8 to 5.0 NTU versus the requirement of 1.5 NTU. The November 30 and January 8 samples had total silver levels of 669 and 735 µg/L and dissolved silver levels of 559 and 599 µg/L, which exceeded the 500 µg/L ISS MORD limit (Fig. 5). On the other hand, the February 26 sample had total and dissolved silver levels of 347 and 189 µg/L, respectively, both within the ISS MORD requirement.

Although elevated turbidity in the SVO-ZV samples does not pose a direct health risk, the concern is that particulates causing the turbidity can shield bacteria from the silver biocide. The results of the dissolved silver

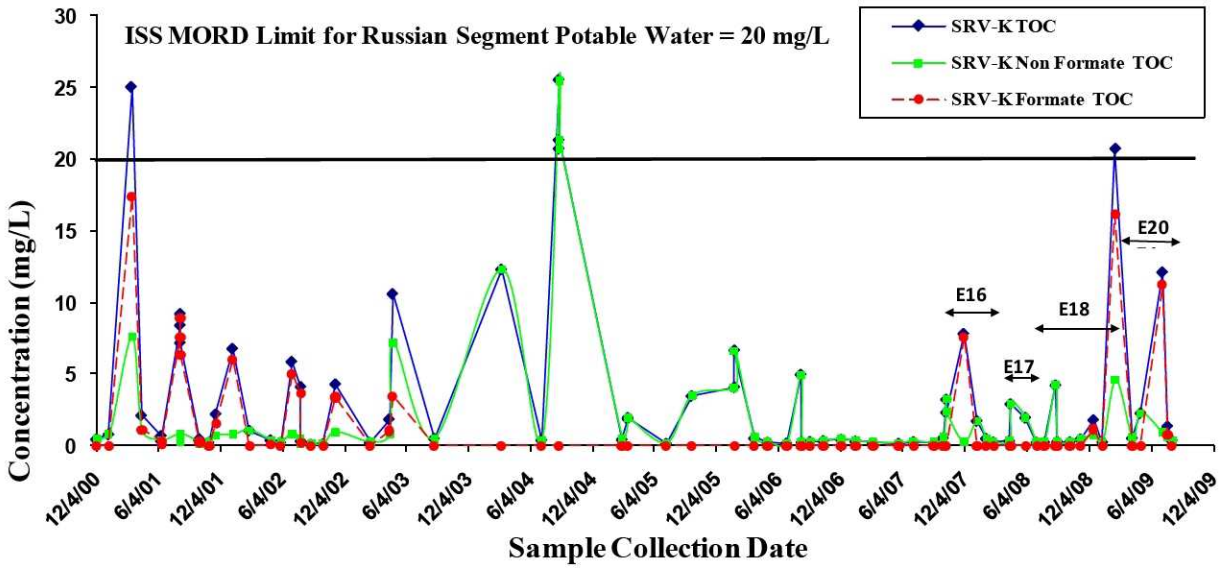

Figure 2. Total, Formate, & Non-formate Organic Carbon in SRV-K Samples ISS Flights 4A to Soyuz 18

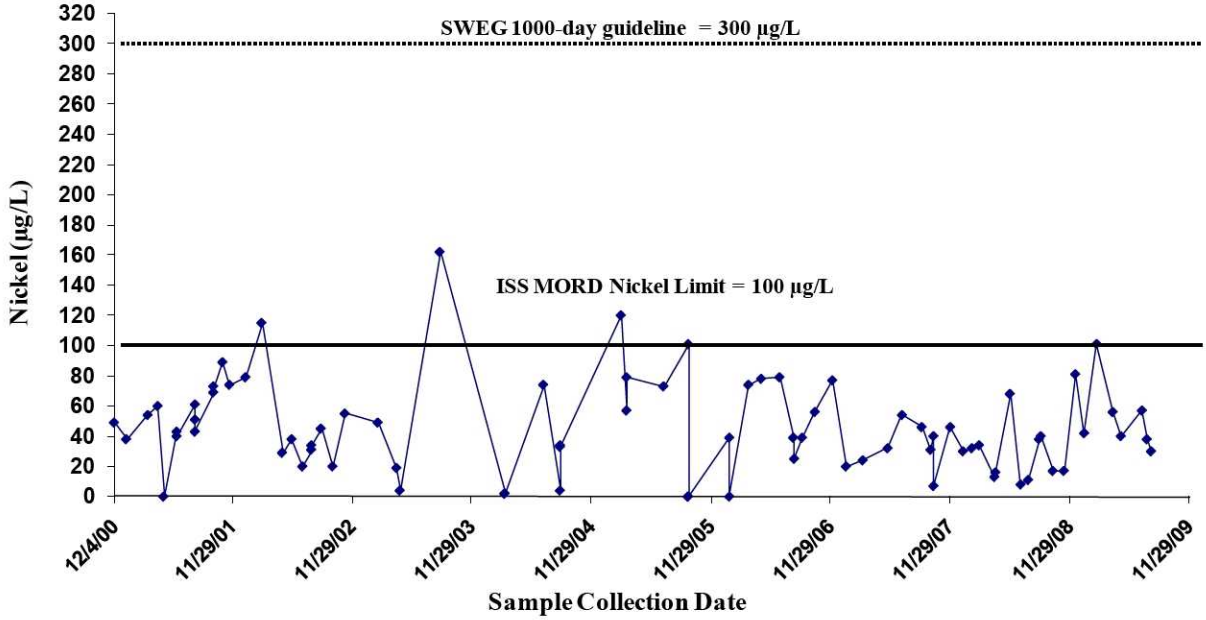

Figure 3. Nickel Levels in SRV-K Water Samples ISS Flights 4A to Soyuz 18

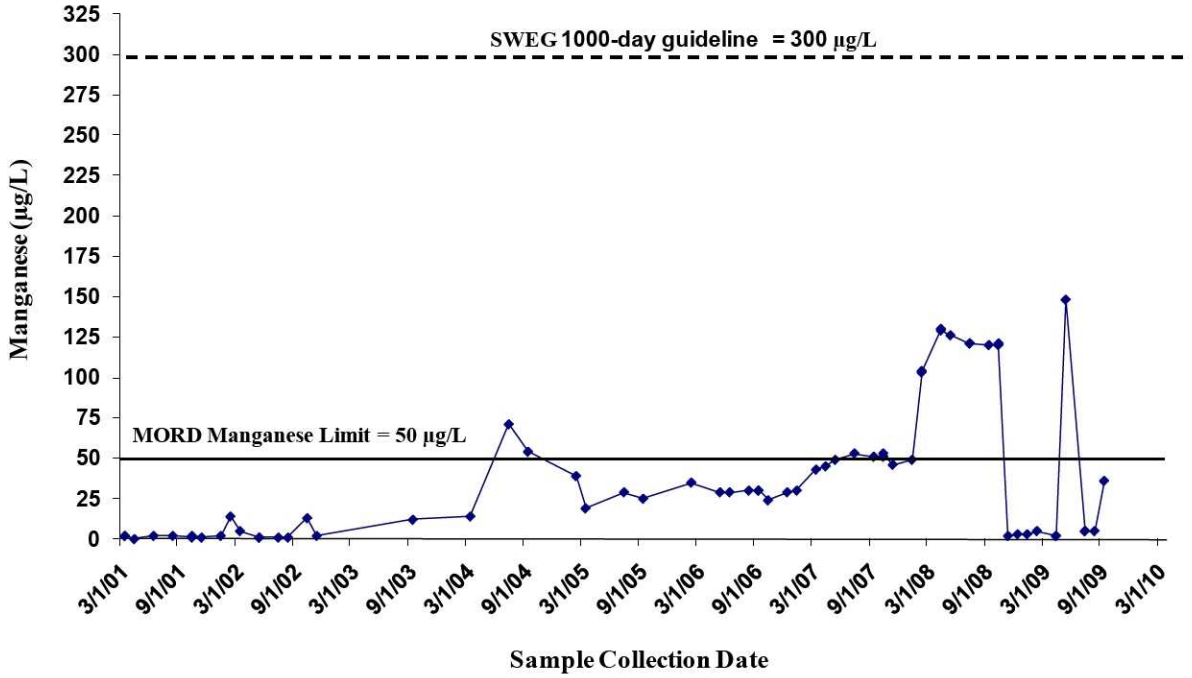

Figure 4. Manganese Levels in SVO-ZV Water Samples ISS Flights 5A to Soyuz 18

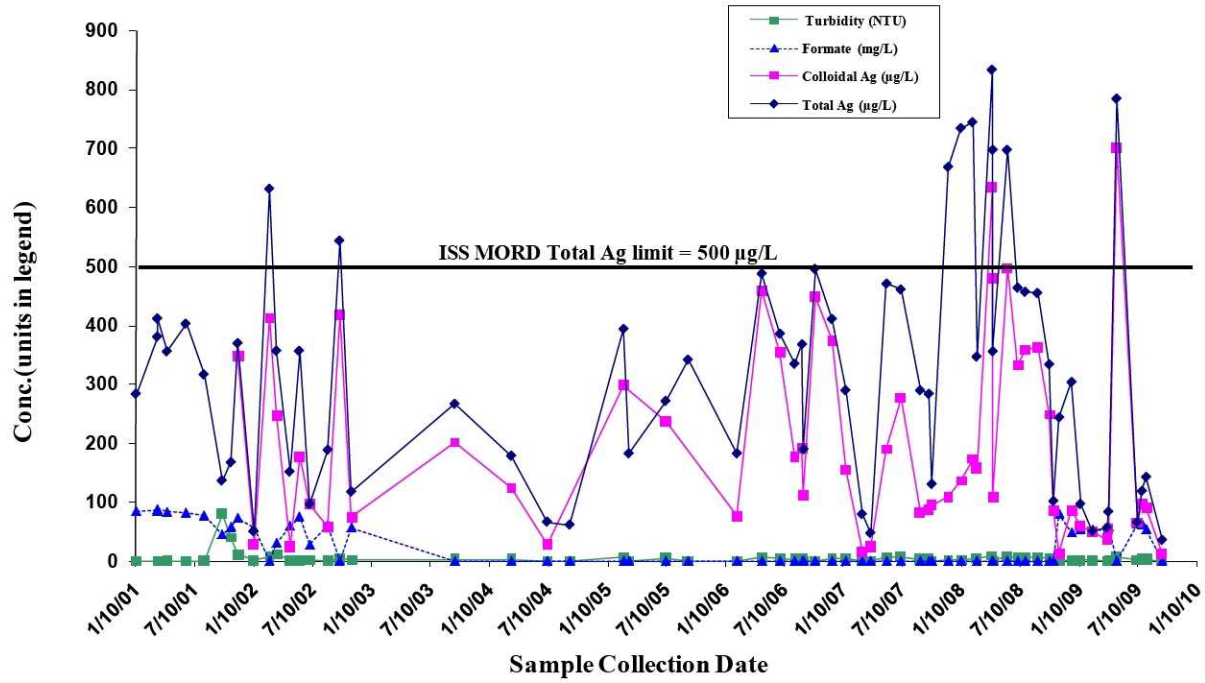

Figure 5. Turbidity, Formate, Total & Colloidal Silver in the SVO-ZV Water Samples ISS Flights 5A to Soyuz 18

analysis indicates that up to 50% of the particulates are due to colloidal silver, which may mitigate this concern. Nevertheless, the dissolved silver levels exceeded the 500 µg/L ISS MORD requirement for the first time ever since November 21, 2001 when WAFAL initiated measuring total and dissolved silver in the SVO-ZV samples. Chloride levels in the 3 samples were 7.75, 8.11, and 8.24 mg/L. Although the manganese level of 104 µg/L in the February 26 sample exceeded the 50 µg/L MORD requirement (Fig. 4), it was well below the recent SWEG limit of 300 µg/L and thus not considered to be a health concern.[10]

EXPEDITION 17

A total of 10 chemical archival potable water samples consisting of 3 SRV-K warm, 3 SRV-K hot, and 4 SVO-ZV samples, were collected by the Expedition 17 crew. These samples were taken during sampling sessions on April 13, April 16, May 30, August 27, and October 21, 2008 and returned on Soyuz 15, STS-124 (1J) and Soyuz 16 as detailed in Table 2. The samples that returned on STS-124 (1J) were collected in U.S. 1-liter Teflon® water sample bags and were received in the WAFAL on June 16, 2008. Each sample had sufficient volume to support full chemical characterization per Table 1. All samples returned on Soyuz 15 and 16 were collected in RSA drink bags. After Soyuz return, U.S. aliquots were transferred to opaque Teflon® bottles for transport to the U.S. The Soyuz 15 and 16 samples were received in the WAFAL on May 2 and December 8, 2008, respectively. Due to reduced sample volumes, none of the samples were analyzed for turbidity, total dissolved solids, or iodine. Conductivity and pH were analyzed for the SRV-K hot and SVO-ZV samples taken April 16. Volatile organics were analyzed by direct injection for the SRV-K warm and SVO-ZV samples taken April 16. Inorganic parameters were analyzed for the SRV-K hot sample taken April 16 while the organics parameters were analyzed for the SRV-K warm sample taken April 16. Semi-volatiles and formaldehydes were not analyzed for any of the April 16 samples. Inorganic parameters were analyzed for the SRV-K hot sample taken August 27 while organics parameters (excluding volatiles and semi-volatiles) were analyzed for the SRV-K warm sample taken August 27.

SRV-K Potable Water Samples

All chemical parameters measured for the 6 SRV-K potable water samples were within the ISS MORD water quality requirements except for manganese and silver. Manganese levels of 96 µg/L and 139 µg/L for the SRV-K hot samples taken April 16 and May 30, respectively, exceeded the ISS MORD aesthetic-based limit of 50 µg/L but were both well below the health-based SWEG limit of 300 µg/L.[10] The May 30 sample also contained 895 µg/L silver versus the ISS MORD limit of 500 µg/L. The elevated silver and manganese levels along with the chloride (9.89 mg/L) and sulfate (43.2 mg/L) levels suggest that Rodnik water may have been used as makeup water when the May 30 sample was collected. The silver levels (added biocide) found in the other SRV-K samples (30 to 267 µg/L) were all much lower indicating that heating of the water by the SRV-K galley pasteurization unit continued to be the main source of microbial control. The TOC levels ranged from 0.34 to 4.24 mg/L and were well below the ISS limit (Fig. 2). Nickel levels ranged from 13 to 68 µg/L and were all within specifications (Fig. 3).

SVO-ZV Potable Water Samples

All chemical parameters measured for the 4 SVO-ZV water samples were within the ISS MORD requirements except for turbidity, manganese, and silver. Turbidity levels of 9.5 and 9.0 NTU in the April 13 and May 30 samples, respectively, exceeded the ISS MORD limit of 1.5 NTU. As discussed earlier, although elevated turbidity does not pose a direct health risk there is concern that particulates causing the turbidity can shield bacteria from the silver biocide. Manganese levels in the SVO-ZV samples ranged from 126 to 130 µg/L (Fig. 4). Although these levels exceeded the ISS MORD aesthetic-based limit of 50 µg/L, they all were well within the SWEG health-based guideline of 300 µg/L.[10] Three of the 4 SVO-ZV samples contained silver levels from 698 to 834 µg/L that exceeded the ISS MORD limit of 500 µg/L (Fig. 5). Dissolved silver levels ranged from 16 to 218 µg/L indicating that some of the particulates contributing to elevated turbidity were colloidal silver.

The likely source of the high manganese and silver levels in the SVO-ZV samples is the Rodnik ground-supplied water. Elevated manganese and total silver levels in Rodnik water samples is an ongoing issue that has been previously discussed.[3-9] This is not considered to be a crew health threat because the ISS crews use other low-silver water sources for the majority of their consumed water. Nevertheless, discussions on minimizing the presence of silver particles in the Rodnik water and lowering the silver concentration have continued with Russian water quality experts. Chloride levels in the SVO-ZV samples ranged from 8.04 to 9.50 mg/L. TOC ranged from 1.89 to 3.73 mg/L, with all samples well below the ISS MORD limit.

EXPEDITION 18

The Expedition 18 crew collected a total of 42 chemical archival potable water samples (4 SRV-K warm, 4 SRV-K hot, 9 SVO-ZV, 7 PWD ambient, 5 PWD hot, 2 PWD Aux Port, and 11 WPA RIP) on the sample collection dates designated in Table 1. All samples were collected in U.S. 1-liter Teflon® water sample bags that were returned on STS-126 (ULF2), STS-119 (15A), and Soyuz 17 and received in the WAFAL on December 2, 2008, March 30, 2009, and April 19 and June 15, 2009, respectively. Due to insufficient sample volume, the April 6 SVO-ZV sample was not analyzed for pH, conductivity, turbidity, total dissolved solids, iodine or formaldehyde, and the July 2, July 25, and October 8, 2009 SVO-ZV samples were not analyzed for total dissolved solids.

ISS RUSSIAN SEGMENT:

SRV-K Potable Water Samples

All chemical parameters measured for the 8 SRV-K potable water samples were within the ISS MORD water quality requirements except for nickel. The nickel levels in the samples ranged from 8 to 101 µg/L. The February 19 sample contained 101 µg/L of nickel, which slightly exceeded the 100 µg/L ISS MORD limit (Fig. 3). Because this level was well below the SWEG value of 300 µg/L, it was not considered to be a crew health risk.[11] The TOC levels of the SRV-K samples ranged from 0.25 to 20.7 mg/L (Fig. 2). The Feb. 19 sample's elevated TOC level of 20.7 mg/L can be attributed to a formate level of 61.8 mg/L, indicating that CWC potable water was being used as make-up water at the time the sample was collected. The silver levels (added biocide) in the SRV-K samples of 7 to 32 µg/L continued to be low indicating that heating of the water by the SRV-K galley pasteurization unit appeared to be the main source of microbial control.

SVO-ZV Potable Water Samples

All chemical parameters measured for the 9 SVO-ZV water samples were within the ISS MORD requirements except for turbidity and manganese. Turbidity ranged from 0.4 to 6.6 NTU, with 7 of 9 samples exceeding the specification of 1.5 NTU. Although elevated turbidity in the SVO-ZV samples is not considered a direct health risk, the concern is that particulates causing the turbidity can shield bacteria from the silver biocide. The dissolved silver levels in the SVO-ZV samples ranged from < 8 to 230 µg/L indicating that a small amount of the particulates are due to colloidal silver which may mitigate this concern. Total silver in the SVO-ZV samples ranged from 51 to 464 µg/L, with all levels below the 500 µg/L limit. Elevated TOC (15.0 to 22.9 mg/L) and formate levels (48.6 to 80.6 mg/L) in 5 of the 9 SVO-ZV samples confirm that CWC potable water was being used in the SVO-ZV system at the time the samples were collected (Fig. 5).

Although elevated silver levels were seen in previous SVO-ZV samples collected during Expeditions 16 and 17 and returned on STS-122 (1E) and STS-124 (1J), respectively, the silver levels during Expedition 18 returned to acceptable limits (< 500 µg/L) when Rodnik water was being used in the SVO-ZV. On the other hand, silver levels in SVO-ZV samples decreased from 304 µg/L on December 16, 2008 to 57 µg/L on April 5, 2009 (Fig. 5). These reduced levels are a concern as the potable CWCs are originally dosed with around 500 µg/L of silver. These low silver biocide levels may be ineffective for maintaining bacterial control; therefore, continued close monitoring of the SVO-ZV silver level is recommended to determine if remedial action is required.

Manganese ranged from 2 to 121 µg/L, with 4 of 9 samples collected from July to October 2008 exceeding the 50 µg/L MORD limit when Rodnik water was being used in the SVO-ZV system (Fig. 4). Because these exceedances were well within the SWEG guideline of 300 µg/L for manganese[10], they were not considered to be a crew health risk. The April 5 SVO-ZV sample contained 36 µL of bis-2-ethylhexyl phthalate. Although this level exceeded the EPA MCL of 6 µg/L it was well below the SWEG value of 20,000 µg/L and; therefore, not considered to be toxicologically significant.[12]

ISS U.S. SEGMENT:

90-Day Checkout -WPA Product Water Samples

During the 90-day WRS checkout period, the Expedition 18 crew collected a total of 25 archival potable water samples from various sampling locations within the WRS and returned them on STS-126 (ULF2), STS-119 (15A), and Soyuz 17 as summarized in Table 1. The 5 WPA product water samples returned on STS-126 (ULF2) were initial start up samples. These 5 samples were collected during docked operations and returned. Activation and checkout of the potable water dispenser (PWD) was not completed before Shuttle undocking so these samples were collected from the WPA rack interface panel (RIP) and the PWD auxiliary port. The 18 WPA product water samples returned on STS-119 (15A) and 2 WPA samples returned on Soyuz 17 were collected throughout the 90-day verification period and more accurately reflect integrated water system results.

Samples returned on STS-126 (ULF2)

All chemical parameters measured for the 5 initial WPA product water samples were within limits specified in Table LXX of SSP 41000[2] except for nickel in the WPA RIP samples collected on November 22 and November 25, 2008 (1690 and 415 µg/L versus a limit of 300 µg/L) as shown in Fig. 6. These high levels are probably due to leaching of nickel from the stainless steel plumbing indicating that the samples were most likely comprised of stagnant water stored in the lines before launch versus actual WPA product water. Biocidal iodine (I_2) was below required levels in the first sample only (0.2 mg/L versus a requirement of 1 to 4 mg/L) as shown in Fig. 7. This low level is likely due to the degradation of iodine in the servicing water put into the system before launch. The TOC values ranged from 0.19 to 1.05 mg/L, which are all well within the 3 mg/L limit (Fig. 8). Isopropanol (0.2 to 1.0 mg/L), acetone (0.009 to 0.17 mg/L), and traces of formaldehyde, benzyl alcohol, benzene, iodomethane, toluene, and o-xylene were detected in the initial WPA RIP samples.

Samples returned on STS-119 (15A)

All chemical parameters measured for 18 WPA water samples returned on STS-119/15A were within ISS water quality limits except for turbidity and total iodine. The 2 PWD hot samples collected on December 29, 2008 and January 30, 2009 had turbidity levels of 1.6 and 3.1 NTU, respectively, versus a limit of 1 NTU. These elevated turbidity levels appear to be due to iron in these PWD hot samples. The iron levels were 56 µg/L for the December 29 sample and 261 µg/L for the January 30 sample (Fig. 9). The iron level subsequently decreased to non-detectable levels after a PWD disinfection flush on March 23. It appears the elevated turbidity and iron levels may have been due to corrosion in the PWD hot line while it was left stagnant during efforts to control microbial growth in the ambient line.

The 3 PWD ambient samples collected January 14, January 21, and January 30, 2009 contained 0.53, 0.80, and 0.61 mg/L total iodine, respectively, which exceeded the 0.2 mg/L point of use limit (Fig. 7). These elevated levels can be attributed to efforts to control high microbial counts in the PWD ambient line. Starting early January 2009, the PWD ACTEX was bypassed and iodinated WPA water was flushed through the PWD microbial filter daily in an attempt to maintain some residual biocidal iodine in the PWD ambient line. Unfortunately, as no biocidal iodine was detected in these samples, the results show that the filter absorbed the biocidal iodine with only non-biocidal iodine passing through the filter. Due to the inability to maintain bacterial control in the PWD ambient line, the PWD lines were disinfected with a 40 mg/L iodine solution on March 17, 2009. The March 18 sample containing 10.9 mg/L total iodine was taken before 2 liters of WPA water were passed through the ACTEX to flush the system. Another 5 liters of water were then flushed through both the hot and ambient lines on March 23 before that day's sample was taken. Even with these flushes, however, the total iodine levels in the samples collected March 23 and March 25 of 0.44 and 0.50 mg/L were still above the 0.2 mg/L point of use limit. This appears to be due to the slow leaching of the iodine absorbed on the PWD microbial filter back into the water.

The nickel levels in the samples returned on STS-119/15A were all below the 300 µg/L requirement (Fig. 1). The TOC values for the WPA RIP samples ranged from 0.07 to 0.23 mg/L. Only trace levels of acetone, iodomethane, formaldehyde, methylene chloride, and xylenes were detected. No benzyl alcohol or benzene was detected in these samples. The TOC values for the PWD hot samples ranged from 0.19 to 1.20 mg/L. Low levels of acetone (0.06 to 0.27 mg/L) and isopropanol (< 0.1 to 1.2 mg/L) along with traces of formaldehyde, ethylbenzene, and xylenes were detected. No iodomethane, benzyl alcohol, or benzene were detected in these samples. The TOC values for the WPA PWD ambient samples ranged from 0.29 to 0.72 mg/L. Low levels of acetone (0.02 to 0.14 mg/L) and isopropanol (< 0.1 to 0.31) along with traces of formaldehyde, ethylbenzene and xylenes were detected. No iodomethane, benzyl alcohol, or benzene were detected in these samples.

Samples returned on Soyuz 17

All chemical parameters measured for the 2 WPA water samples collected April 2, 2009 and returned on Soyuz 17 were within ISS limits, except for a level of 0.43 mg/L total iodine in the PWD ambient sample (Fig. 7), which was slightly elevated versus the 0.2 mg/L point of use limit. The TOC levels were 0.10 and 1.1 mg/L, respectively, both well below the 3.0 mg/L limit. Traces of iodonaphthalene and formaldehyde were detected in the WPS RIP sample, and acetone (0.12 mg/L) was detected in the PWD ambient sample.

90-Day Checkout Summary

The results of the chemical analyses of the 5 WPA water samples returned on STS-126 (ULF2) indicated all parameters met requirements except for high nickel and low iodine levels in the initial 2 samples. The high nickel and low iodine levels were resolved as the system was operated, confirming the initial 2 samples were actually ground water used to fill the water system before launch. Based on the results for the remaining 3 samples, the

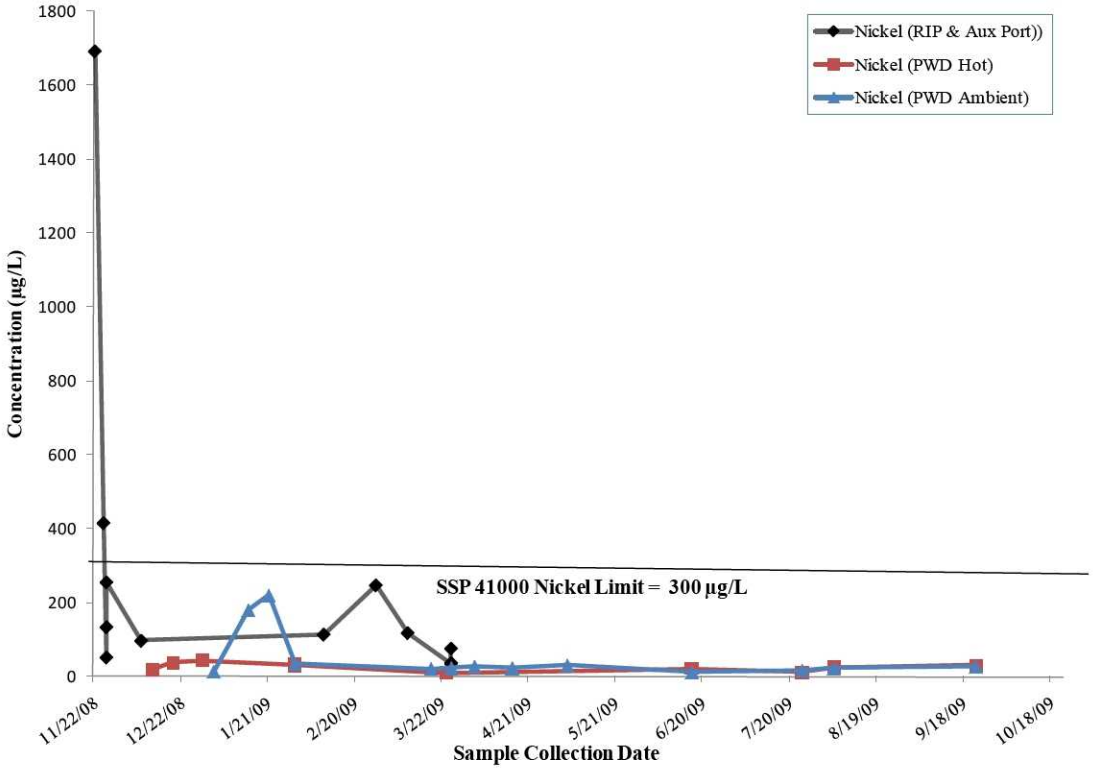

Figure 6. Nickel Levels in US Potable Water Samples ISS ULF2 to Soyuz 18

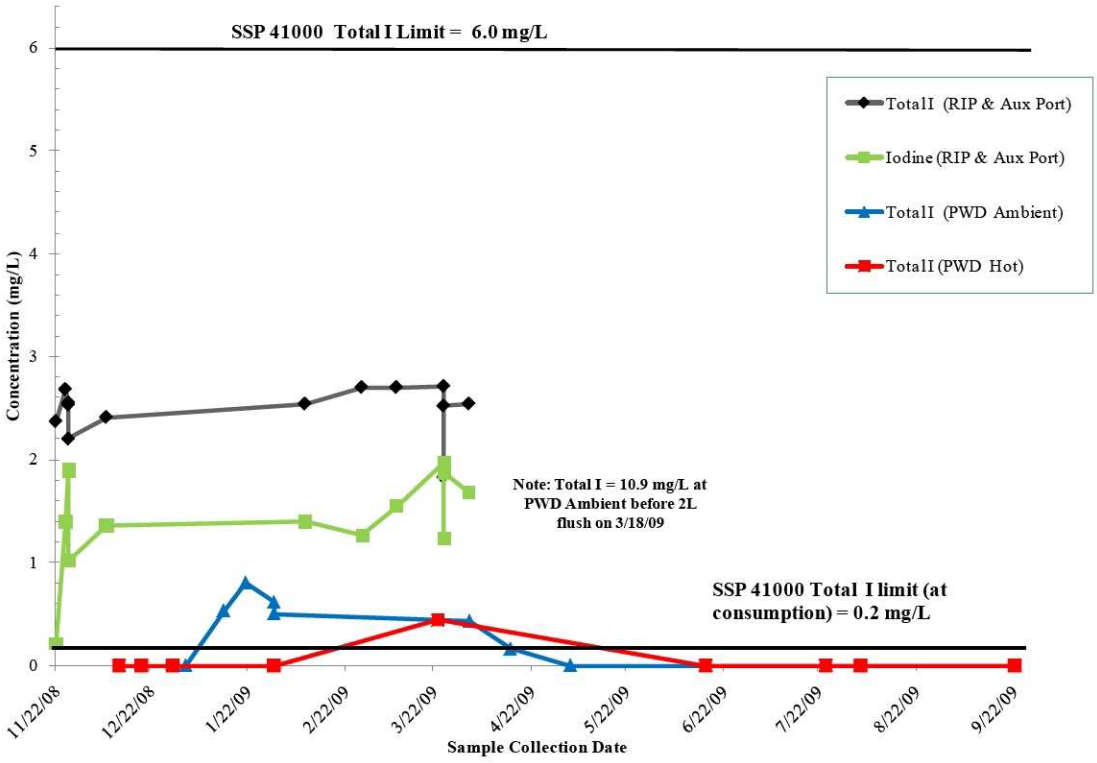

Figure 7. Total I & Iodine Levels in US Potable Water Samples ISS ULF2 to Soyuz 18

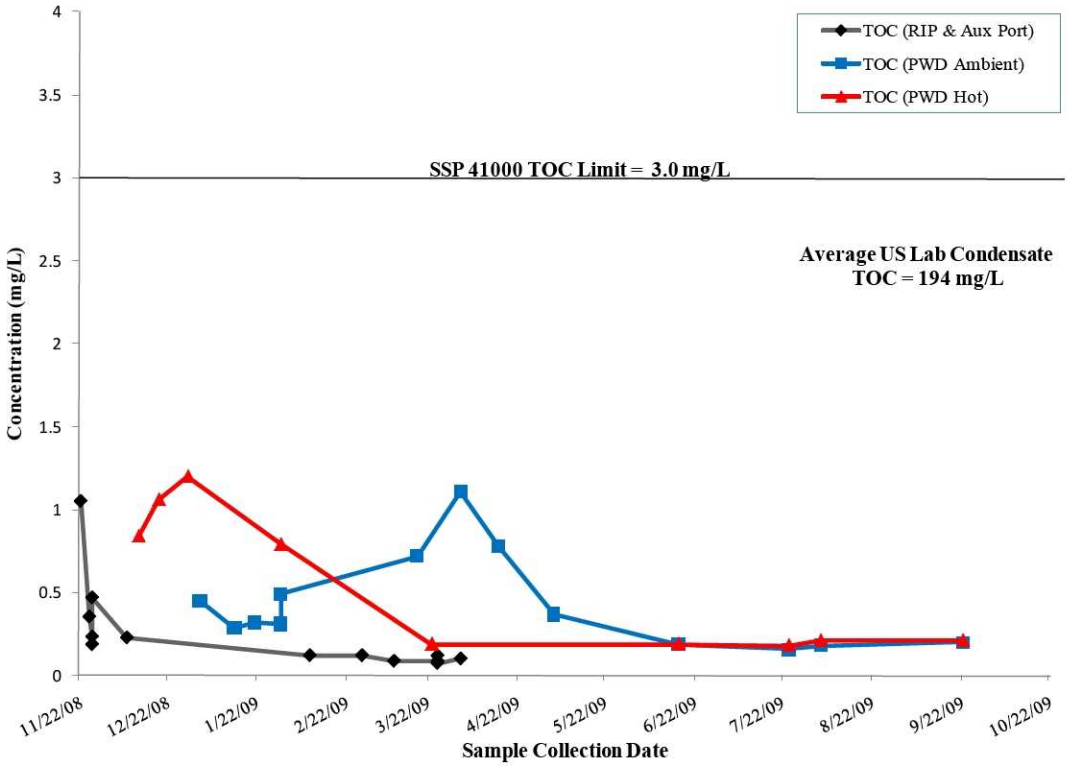

Figure 8. TOC Levels in US Potable Water Samples ISS ULF2 to Soyuz 18

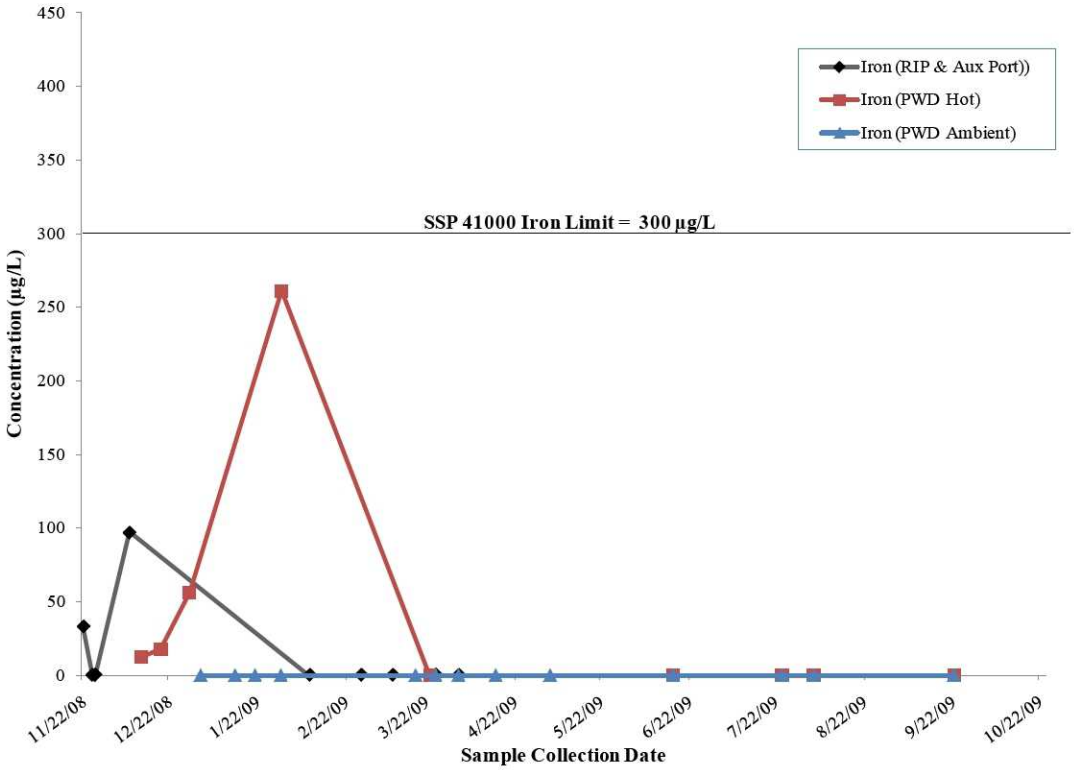

Figure 9. Iron Levels in US Potable Water Samples ISS ULF2 to Soyuz 18

WPA product water was designated chemically acceptable for hygiene use by the crews during the remainder of the 90-day verification period. No WPA water was consumed during the 90-day checkout. The results of the chemical analysis of the U.S. WPA and PWD samples returned on STS-119 (15A) and Soyuz 17 indicated that all parameters met ISS specifications except for the total iodine levels in the PWD samples. The slightly elevated total iodine levels in the PWD ambient line were not considered a hazard to the crew as they were associated with efforts to control the high bacteria levels and are expected to decrease as the system is used. The analytical results for WPA samples collected by the Expedition 18 crew during the 90-day checkout period were ultimately used as the basis for the ISS Program decision to begin crew consumption of WPA water beginning in May of 2009.

EXPEDITION 20

The Expedition 20 crew collected a total of 21 chemical archival potable water samples (3 SRV-K warm, 2 SRV-K hot, 6 SVO-ZV, 6 PWD ambient, and 4 PWD hot) on the sample dates designated in Table 1. All samples were collected in U.S. 1-liter Teflon® water sample bags that were returned on Soyuz 15, STS-127 (2JA), STS-128 (17A), and Soyuz 18 and received in the WAFAL on August 3, September 14, and October 21, 2009, respectively. Due to insufficient sample volume, turbidity and total solids were not analyzed on some of the samples.

ISS RUSSIAN SEGMENT:

SRV-K Potable Water Samples

All chemical parameters measured for the 5 SRV-K potable water samples were within the ISS MORD requirements except for the manganese level of 116 µg/L in the SRV-K hot sample collected May 4, 2009, which was above the 50 µg/L limit. In addition to the elevated manganese, the 8.0 mg/L chloride and 42 mg/L sulfate levels also suggest that the May 4 sample contained a significant amount of Rodnik water. Nickel levels ranged from 30 to 57 µg/L and were all below the ISS MORD limit of 100 µg/L (Fig. 3). Total silver levels (added biocide) continued to be low in the SRV-K samples (14 to 49 µg/L) indicating that heating of the water by the SRV-K galley pasteurization unit continues to be the main source of microbial control.

The SRV-K samples contained TOC levels ranging from 0.39 to 12.1 mg/L, which were all below the ISS MORD limit of 20 mg/L. An updated historical plot of the TOC trend in the SRV-K water samples is shown in Fig. 2. The higher TOC level of 12.1 mg/L in the July 7 sample can be attributed to formate (43.0 mg/L), which indicates that potable CWC water was being used as make up water at the time of sample collection. In addition, the SRV-K warm sample collected April 9 contained 9 µL of bis-2-ethylhexyl phthalate level, which slightly exceeded the EPA MCL of 6 µg/L.

Although the manganese level was above the ISS MORD limit and the bis-2-ethylhexyl phthalate level was just above the EPA MCL, both were well below SWEG limits of 300 and 20,000 µg/L, respectively.[10,12] Therefore, these levels were not considered to be a crew health risk.

SVO-ZV Potable Water Samples

All chemical parameters measured for the 6 SVO-ZV water samples were within the ISS MORD requirements except for turbidity, manganese, and total silver. The samples contained turbidity levels ranging from 0.2 to 8.1 NTU, with 4 of 6 samples exceeding the 1.5 NTU limit. Manganese ranged from 2 to 148 µg/L, with only the May 4 sample exceeding the ISS MORD requirement of 50 µg/L. This level of 148 µg/L did not present a crew health risk because it was well below the 300 µg/L SWEG value (Fig. 4).[10]

Total silver levels ranged from 36 to 785 µg/L in the SVO-ZV samples. Only the May 4 sample level with 785 µg/L exceeded the ISS MORD requirement of 500 µg/L (Fig. 5). The elevated TOC (15.1 to 18.3 mg/L) and formate (54.3 to 64.0 mg/L) levels in 4 of the 6 samples suggest that ISS CWC potable water was being used in the SVO-ZV system at the time the samples were collected. The sample collected on May 4 was more characteristic of typical SVO-ZV water with a TOC level of 1.7 mg/L and no formate detected.

The concern with elevated turbidity in the SVO-ZV samples is that particulates causing the turbidity can shield bacteria from the silver biocide. The dissolved silver levels of < 2 to 83 µg/L indicate that a small amount of the particulates are colloidal silver that may mitigate this concern. The silver levels of 36 to 143 µg/L in the SVO-ZV samples continue to be well below the 400 to 500 µg/L range typically added to the Rodnik water preflight, indicating losses in the silver levels are occurring. With the exception of the May 4 sample, the biocidal silver levels in the SVO-ZV samples may be insufficient for biocidal control. On the other hand, the sample collected May 4 that appears to be predominately Rodnik water contains an elevated level of 785 µg/L total silver. Elevated silver levels (Fig. 5) have been seen in previous SVO-ZV samples returned from Expedition 16 (669 and 735 µg/L) and Expedition 17 (834 and 698 µg/L). The high silver level in the May 4 SVO-ZV sample suggests that further

discussions with Russian water quality experts are needed to ensure adequate but not excess total silver is being added to the Rodnik water.

ISS US SEGMENT:
WPA Processed Water Samples

All chemical parameters measured for the 10 WPA processed water samples (6 PWD ambient and 4 PWD hot) were within limits specified in Table LXX of SSP 41000.[2] Nickel levels ranged from 12 to 31 µg/L and were well within specification (Fig. 6). The total iodine (I) levels in the PWD samples ranged from < 0.05 to 0.16 mg/L, meeting the point of consumption limit of 0.2 mg/L (Fig. 7). No WPA RIP samples were collected during this timeframe. The iron levels continued to be at non-detectable levels after the PWD disinfection flush on March 23, 2009 (Fig. 9).

The TOC values ranged from 0.18 to 0.86 mg/L, all well within the 3 mg/L limit (Fig. 8). Only trace levels of acetone (11 µg/L), bis-2-ethylhexyl phthalate (12 µg/L), methyl sulfone (68 to 113 µg/L), 2-butanone (6 µg/L), and trans-squalene (22 µg/L) were detected. None of these were at toxicologically significant levels.

Conclusion

The chemical results for the archival potable water samples collected and returned during Expeditions 16 through 20 indicate that the ISS potable water supplies were chemically acceptable for crew consumption. Although the manganese levels in 4 of the 15 SRV-K samples exceeded the ISS MORD requirement of 50 µg/L, the elevated levels of 56 to 139 µg/L were not considered to be a crew health risk because they were well below the 300 µg/L SWEG value.[10] Similarly, one sample contained a nickel level of 101 µg/L that was slightly above the ISS MORD limit of 100 µg/L but well below the 300 µg/L SWEG and not a health concern.[11] Finally the May 30 SRV-K sample contained a total silver level of 895 µg/L silver versus the ISS MORD limit of 500 µg/L and was determined to likely be Rodnik water used as makeup in the SRV-K.

Turbidity levels exceeded the ISS MORD limit of 1.5 NTU in 13 of 22 SVO-ZV samples collected during Expeditions 16 through 20. Although elevated turbidity does not pose a direct crew health risk the concern is that particulates causing the turbidity can shield bacteria from the silver biocide. Dissolved silver levels indicated that some of the particulates contributing to elevated turbidity were colloidal silver, which partially may mitigate the concern. Manganese levels in 10 SVO-ZV samples ranging up to 148 µg/L exceeded the ISS MORD limit of 50 µg/L, but all levels were well below the 300 µg/L SWEG and; therefore, not a health concern.[10] Total silver levels in 6 SVO-ZV samples ranging up to 834 µg/L exceeded the ISS MORD limit of 500 µg/L. These elevated silver levels are likely due to the source being Rodnik water. Concern with elevated manganese and total silver levels in Rodnik water samples is an ongoing issue that has been previously discussed.[3-9] The elevated silver is not considered to be a crew health threat because the ISS crews use other low-silver water sources for the majority of their consumed water. Nevertheless, this is not an ideal situation and discussions on minimizing the presence of silver particles in the Rodnik water and lowering the silver concentration have continued with Russian water quality experts. Previous lab work has demonstrated a drop in silver levels when U.S. CWC potable water and Russian Rodnik water are mixed, although the reason for this is unclear. The low silver biocide levels that can result from this mixing may be ineffective for maintaining bacterial control; therefore, continued close monitoring of the SVO-ZV silver level is recommended to determine if remedial action is required.

The analytical results from the 90-day WRS checkout period indicated that WPA product water was acceptable for crew consumption, which was authorized beginning May of 2009. High nickel and low iodine levels found in the first 2 samples collected were resolved as the system was operated, confirming these samples were most likely ground water used to fill the water system before launch. Slightly elevated total iodine levels in the PWD ambient line found during the 90-day checkout were not considered to be a health concern as they were associated with efforts to control the high bacteria levels. The PWD ambient iodine levels subsequently have decreased to below the point-of-use limit as confirmed by the results for the Expedition 20 returned samples. Despite a few early 90-day checkout samples containing elevated iron, iron has been at non-detectable levels after the PWD disinfection flush in March of 2009.

Appendix

Appendix 1 contains the analysis results for the chemical archive potable water samples collected in flight from the Russian Segment SRV-K (regenerated water) system during Expeditions 16 through 20. Appendix 2 contains analytical results for the chemical archive samples collected in flight from the Russian Segment SVO-ZV (stored water) system during these 5 expeditions. Appendix 3 contains analytical results for Rodnik potable water samples

collected pre-flight from the water supplies loaded on the Progress 28, 29, 30, 31, and 34 vehicles, and for 2 Rodnik tank samples collected in flight during Expeditions 16 and 17. Appendix 4 contains the analytical results for chemical archival water samples collected from the U.S. Segment Water Processor Assembly during Expeditions 18 through 20.

Acknowledgments

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Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1JA/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant Level	Maximum Contaminant Level	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	(MCL)	Source	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by			20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
Physical Characteristics												
pH	pH units	U.S.	5.5-9.0	MORD	6.89	7.02	6.99	7.68	8.05	NA	7.83	8.15
Conductivity	µS/cm	U.S.			163	220	4	112	270	NA	135	365
Turbidity	NTU	U.S.	1.5*	MORD	0.7	0.5	0.8	0.2	NA	NA	0.3	1.3
Total Dissolved Solids	mg/L	U.S.	100 (1,000#)	MORD	68	108	NA	53	NA	NA	58	208
Iodine (LCV)												
Total I	mg/L	U.S.	0.05	MORD	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05
Anions (IC/ISE)												
Bromide	mg/L	U.S.			<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5
Chloride	mg/L	U.S.	250	MORD	<0.15	5.37	5.92	2.55	6.92	NA	1.71	9.89
Fluoride	mg/L	U.S.	1.5/4	MORD/EPA	0.46	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	U.S.	10	MORD/EPA	<0.11	0.17	<0.11	<0.11	0.19	NA	<0.11	0.27
Nitrite as Nitrogen (NO2-N)	mg/L	U.S.	1	EPA	<0.08	<0.08	<0.08	<0.08	<0.08	NA	<0.08	<0.08
Phosphate as P (PO4-P)	mg/L	U.S.			<0.24	<0.24	<0.24	NA	<0.04	NA	<0.24	<0.24
Sulfate	mg/L	U.S.	250	MORD	<0.75	30.4	18.2	7.84	32.2	NA	5.59	43.2
Cations (IC)												
Ammonia as Nitrogen (NH3-N)	mg/L	U.S.	2/1	MORD/SWEG	<0.002	<0.002	<0.002	0.013	0.174	NA	0.002	<0.002
Lithium	mg/L	U.S.			<0.002	<0.002	0.002	0.002	0.004	NA	<0.002	0.004
Metals (ICP/MS)												
Calcium	mg/L	U.S.	100	MORD	25.1	30.1	26.8	15.5	36.5	NA	28.4	52.5
Magnesium	mg/L	U.S.	50	MORD	4.63	6.68	5.69	2.80	7.72	NA	0.98	12.3
Potassium	mg/L	U.S.			<0.01	2.43	1.73	0.86	2.32	NA	0.35	3.30
Sodium	mg/L	U.S.			0.45	3.46	2.91	1.51	4.64	NA	0.43	6.39
Aluminum	µg/L	U.S.			7	22	41	22	40	NA	13	62
Antimony	µg/L	U.S.	6	EPA	<2	<2	<2	<2	<4	NA	<8	<8
Arsenic	µg/L	U.S.	10	MORD/EPA	<1	<1	<1	<1	<4	NA	<4	<4
Barium	µg/L	U.S.	1,000/10,000	MORD/SWEG	2	14	9	5	19	NA	<4	26
Beryllium	µg/L	U.S.	4	EPA	<1	<1	<1	<1	<4	NA	<4	<4
Cadmium	µg/L	U.S.	5/22	MORD/SWEG	<1	<1	<1	<1	<4	NA	<4	<4
Chromium	µg/L	U.S.	100	MORD/EPA	<5	<5	<5	<5	<20	NA	<20	<20
Cobalt	µg/L	U.S.			<1	<1	<1	<1	<4	NA	<4	<4
Copper	µg/L	U.S.	1,000/1,300	MORD/EPA	7	26	21	15	35	NA	10	20
Iron	µg/L	U.S.	300	MORD	49	54	61	31	79	NA	59	108
Lead	µg/L	U.S.	50/15	MORD/EPA	<1	2	1	<1	<4	NA	<4	<4
Manganese	µg/L	U.S.	50/300	MORD/SWEG	1	34	56	36	96	NA	14	139
Mercury	µg/L	U.S.	2	MORD/EPA	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5
Molybdenum	µg/L	U.S.	40	EPA HA	<1	<1	<1	<1	<4	NA	<4	<4
Nickel	µg/L	U.S.	100/300	MORD/SWEG	46	30	32	34	16	NA	13	68
Selenium	µg/L	U.S.	10/50	MORD/EPA	<1	<1	<1	<1	<4	NA	<4	4
Silver	µg/L	U.S.	500/400	MORD/SWEG	22	245	62	33	267	NA	30	895
Silver, Dissolved	µg/L	U.S.			3	131	15	18	84	NA	20	64
Zinc	µg/L	U.S.	5,000/2,000	MORD/SWEG	82	121	71	71	542	NA	24	48

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1J A/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
Total Organic Carbon (Sievers)												
Total Inorganic Carbon	mg/L	U.S.			14.8	20.6	20.8	12.3	NA	26.1	17.2	34.3
Total Organic Carbon	mg/L	U.S.	20**	MORD	7.82	1.75	0.53	0.27	NA	2.93	0.34	1.98
Volatile Organics												
Acetone	µg/L	U.S.	15,000	SWEG	76	3	<2	3	NA	5	13	<2
Acryloniltrile	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Benzene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Bromobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	U.S.	90	EPA HA	<4	<4	<4	<4	NA	<4	<4	<4
Bromodichloromethane	µg/L	U.S.	THM 80	EPA	<0.4	1.1	<0.4	<0.4	NA	1.5	<0.4	2.2
Bromoform	µg/L	U.S.	THM 80	EPA	<2	<2	<2	<2	NA	<2	<2	<2
Bromomethane	µg/L	U.S.	10	EPA HA	<2	<2	<2	<2	NA	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	U.S.	4,000	EPA HA	<2	<2	<2	<2	NA	4	<2	<2
n-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Carbon tetrachloride	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	1.5	<0.4	<0.4
Chloroacetonitrile	µg/L	U.S.			<10	<10	<10	<10	NA	<10	<10	<10
Chlorobenzene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Chloroethane	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Chloroform	µg/L	U.S.	6,500/THM 80	SWEG/EPA	<0.4	29.9	1.6	0.6	NA	15.1	1.8	36.1
Chloromethane	µg/L	U.S.	30	EPA HA	NA	NA	NA	NA	NA	<2	<2	<2
2-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	U.S.	THM 80	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	U.S.	0.2	EPA	<2	<2	<2	<2	NA	<2	<2	<2
1,2-Dibromoethane (EDB)	µg/L	U.S.	0.05	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Dibromomethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	U.S.	600	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	U.S.	600	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	U.S.	75	EPA	<0.4	<0.4	<0.4	<0.4	NA	NA	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	U.S.	1,000	EPA HA	NA	NA	NA	NA	NA	<2	<2	<2
1,1-Dichloroethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	U.S.	7	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
1,1-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1JA/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant Level	Maximum Contaminant Level	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted			30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
trans-1,3-Dichloropropene	µg/L	U.S.			<2	<2	<2	<2	NA	NA	<2	<2
Diethyl ether	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Ethylbenzene	µg/L	U.S.	700	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Hexachlorobutadiene	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	NA	<2	<2	<2
Hexachloroethane	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	NA	<2	<2	<2
2-Hexanone	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Iodomethane	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	U.S.	4,000	EPA DWEL	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Methyl acrylate	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	U.S.	15,000/5	SWEG/EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
4-Methyl-2-pentanone	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Naphthalene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
2-Nitropropane	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Pentachloroethane	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	U.S.			<10	<10	<10	<10	NA	<10	<10	<10
n-Propylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Styrene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	U.S.	70	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	U.S.	0.3	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Tetrahydrofuran	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Toluene	µg/L	U.S.	1,000	EPA	0.6	0.5	0.5	0.5	NA	1.7	1.7	<0.4
1,2,3-Trichlorobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	U.S.	200	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Trichloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	U.S.	2,000	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	U.S.	40	EPA HA	<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	NA	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	U.S.			<2	<2	<2	<2	NA	<2	<2	<2
Vinyl Chloride	µg/L	U.S.	2	EPA	<2	<2	<2	<2	NA	<2	<2	<2
m&p-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	<0.4	0.9	<0.4	<0.4	NA	<0.4	<0.4	<0.4
o-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	0.4	0.5	0.4	0.5	NA	1.8	1.9	1.8
Volatile Organics - Non-Targets (Tentatively Identified Compounds (>/= 80% match quality)												
Dimethoxymethane (Formal)	µg/L	U.S.			not found	not found	not found	not found	NA	NA	not found	not found

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1J A/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
Extractable Organics												
Acetophenone	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Benzaldehyde	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Benzoic acid	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
Benzothiazole	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Benzyl alcohol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Benzyl butyl phthlate	µg/L	U.S.	7,000	EPA DWEL	<4	<4	<8	<8	NA	NA	<4	<4
2-Butoxyethanol	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
2-(2-Butoxyethoxy)ethanol	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
2-(2-Butoxyethoxy)ethyl acetate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
n-Butylpalmitate	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Butylated hydroxyanisole (BHA)	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N-Butylbenzenesulfonamide	µg/L	U.S.			96	<4	<8	<8	NA	NA	<4	<4
3-tert-Butylphenol	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
Caffeine	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
tris-2-Chloroethyl phosphate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Cholesterol	µg/L	U.S.			<32	<32	<64	<64	NA	NA	<32	<32
o-Cresol (2-Methylphenol)	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Cyclododecane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Decamethylcyclopentasiloxane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Decanoic acid	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2,4-Di-t-butylphenol	µg/L	U.S.			<4	<4	10	<8	NA	NA	<4	<4
1,4 Diacetylbenzene	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N,N-Dibutylformamide	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Dibutyl phthalate	µg/L	U.S.	40,000/4,000	SWEG/EPA DWEL	<4	<4	9	<8	NA	NA	<4	<4
Dibutylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<4	<8	<8	NA	NA	<4	<4
N,N-Diethyl-m-toluamide	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Diethylphthalate	µg/L	U.S.	30,000	EPA DWEL	<4	<4	<8	<8	NA	NA	<4	<4
Diethylene glycol monoethyl ether	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N,N-Diethylformamide	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
Diiodomethane (Methyl iodide)	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Diisopropyl adipate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Dimethyl phthalate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N,N-Dimethyl acetamide	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N,N-Dimethylbenzylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<4	<8	<8	NA	NA	<4	<4
N,N-Dimethylformamide	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Dipropylene glycol methyl ether	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Dodecamethylcyclohexasiloxane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Ethoxyethanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Ethyl-1-hexanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Ethylhexanoic acid	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
bis-2-Ethylhexyl adipate	µg/L	U.S.	400	EPA	<4	<4	<8	<8	NA	NA	<4	<4
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	U.S.	20,000/6	SWEG/EPA	<4	<4	<8	<8	NA	NA	<4	<4
4-Ethylmorpholine	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
1-Formylpiperidine	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Heptanoic acid	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Heptanone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1J A/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
gamma-Hexalactone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Hexanoic acid	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
2-Hexanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Hydroxybenzothiazole	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Ibuprofen	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Iodoform	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Isophorone	µg/L	U.S.	100	EPA HA	<4	<4	<8	<8	NA	NA	<4	<4
4-Isopropylphenol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Lauramide	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Lauric acid (Dodecanoic acid)	µg/L	U.S.			<120	<120	<240	<240	NA	NA	<120	<120
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Mercaptobenzothiazole	µg/L	U.S.	30,000	SWEG	<40	<40	<80	<80	NA	NA	<40	<40
2-Methyl-2,4-pentanediol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
1-Methyl-2-pyrrolidinone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Methyl-4-hydroxybenzoate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Methyl sulfone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Methyl butyric acid	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
2-Methylthiobenzothiazole	µg/L	U.S.			11	<4	<8	10	NA	NA	6	<4
Monomethyl phthalate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Myristic acid	µg/L	U.S.			<24	<24	<48	<48	NA	NA	<24	<24
(+)-Neomenthol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Nicotine	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Nonadecane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Nonanoic acid	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
1-Octadecanol	µg/L	U.S.			<12	<12	<24	<24	NA	NA	<12	<12
Octamethylcyclotetrasiloxane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Octanoic acid	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
4-tert-Octylphenol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Oleic acid	µg/L	U.S.			<40	<40	<80	<80	NA	NA	<40	<40
Oxindole	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Palmitic acid	µg/L	U.S.			<120	<120	<240	<240	NA	NA	<120	<120
Palmitoleic acid	µg/L	U.S.			<100	<100	<200	<200	NA	NA	<100	<100
Pentacosane	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
sec-Phenethyl alcohol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Phenol	µg/L	U.S.	1,000/4,000	MORD/SWEG	<4	<4	<8	<8	NA	NA	<4	<4
2-Phenoxyethanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
N-Phenyl-2-naphthylamine	µg/L	U.S.	260,000	SWEG	<4	<4	<8	<8	NA	NA	<4	<4
2-Phenyl-2-propanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Phenylacetic acid	µg/L	U.S.			<16	<16	<32	<32	NA	NA	<16	<16
Phenethyl alcohol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
2-Phenylphenol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Salicyclic Acid	µg/L	U.S.			<32	<32	<64	<64	NA	NA	<32	<32
trans-Squalene	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Stearic acid	µg/L	U.S.			<100	<100	<200	<200	NA	NA	<100	<100
1-Tetradecanol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Tetramethylsuccinonitrile	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Tetramethyl thiourea	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Tetramethylurea	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1JA/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
Thymol	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Tributylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<4	<4	<8	<8	NA	NA	<4	<4
Tributyl phosphate	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Triethyl phosphate	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Tripropylene glycol monomethyl ether	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Undecanoic acid	µg/L	U.S.			<24	<24	<48	<48	NA	NA	<24	<24
2-Undecanone	µg/L	U.S.			<4	<4	<8	<8	NA	NA	<4	<4
Valeric acid (Pentanoic acid)	µg/L	U.S.			<24	<24	<48	<48	NA	NA	<24	<24
Vanillin	µg/L	U.S.			<8	<8	<16	<16	NA	NA	<8	<8
Alcohols (DAI/GC/MS)												
1-Butanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Butanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
Ethanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
Methanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Methyl-1-butanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Methyl-2-butanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Methyl-1-propanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Methyl-2-propanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
3-Pentanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
1-Propanol	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	U.S.			<100	<100	<100	<100	NA	<100	<100	<100
Glycols (DAI/GC/MS)												
1,2-Ethanediol (Ethylene glycol)	µg/L	U.S.	12000/14000	MORD/EPA HA	<1000	<1000	<1000	<1000	NA	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	U.S.			<500	<500	<500	<500	NA	<500	<500	<500
Carboxylates (CE)												
Acetate	µg/L	U.S.			<125	<125	<125	<125	NA	<125	<125	<125
Formate	µg/L	U.S.	2,500,000	SWEG	29100	<125	<125	<125	NA	<125	<125	<125
Glycolate	µg/L	U.S.			<125	<125	<125	<125	NA	<125	<125	<125
Glyoxylate	µg/L	U.S.			<125	<125	<125	<125	NA	<125	<125	<125
Lactate	µg/L	U.S.			<1000	<1000	<1000	<1000	NA	<1000	<1000	<1000
Oxalate	µg/L	U.S.			<125	<125	<125	<125	NA	<125	<125	<125
Propionate	µg/L	U.S.			<125	<125	<125	<125	NA	<125	<125	<125
Aldehydes												
Formaldehyde	µg/L	U.S.	12,000/1,000	SWEG/EPA HA	<2	<2	<2	<2	NA	<2	<2	<2

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16			ISS 1JA/Exp. 16	Soyuz 15/Exp. 17		ISS 1J/Exp. 17	
Sample Location			Potable Water		SRV-K Warm	SRV-K Warm	SRV-K Warm (Micro bag)	SRV-K Hot	SRV-K Hot (RSA Drink Bag)	SRV-K Warm (RSA Drink Bag)	SRV-K Warm	SRV-K Hot
Sample Description		Test	Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water (#2)	Potable Water (#3)	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	04-Feb-2008	26-Feb-2008	16-Apr-2008	16-Apr-2008	13-Apr-2008	30-May-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080221021	20080221022	20080221024	20080328010	20080502003	20080502004	20080616012	20080616014
Amines (CE)												
Ethylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	NA	<125	<125	<125
Methylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	NA	<125	<125	<125
n-Propylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	NA	<125	<125	<125
Trimethylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<125	<125	<125	<125	NA	<125	<125	<125
Non-volatiles (LC/UV-VIS)												
Urea	µg/L	U.S.			<800	<800	<800	<800	NA	<800	<800	<800
Caprolactam	µg/L	U.S.	100,000	SWEG	<4	<4	<8	<300	NA	<300	<4	<4
Organic Carbon Recovery	percent	U.S.			98.50	0.38	2.92	3.06	NA	0.36	4.32	0.27
Unaccounted Organic Carbon	mg/L	U.S.			0.12	1.74	0.51	0.26	NA	2.92	0.33	1.97

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
Physical Characteristics											
pH	pH units	NA	NA	32	16	118	27	40	121	51	172
Conductivity	µS/cm	NA	NA	7.20	7.13	7.49	7.87	7.68	6.83	6.98	6.91
Turbidity	NTU	NA	NA	0.1	0.3	0.3	0.3	1.4	0.6	0.2	0.6
Total Dissolved Solids	mg/L	NA	NA	31	18	91	20	22	70	20	98
Iodine (LCV)											
Total I	mg/L	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anions (IC/ISE)											
Bromide	mg/L	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	0.8	NA	0.7	0.42	0.48	0.34	1.07	0.40	0.25	0.17
Fluoride	mg/L	<0.1	NA	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.42
Nitrate as Nitrogen (NO3-N)	mg/L	0.12	NA	<0.11	<0.11	1.01	<0.11	<0.11	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	NA	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	4.77	NA	2.92	1.31	8.17	2.21	3.68	3.81	5.69	1.57
Cations (IC)											
Ammonia as Nitrogen (NH3-N)	mg/L	<0.002	NA	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	NA	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Metals (ICP/MS)											
Calcium	mg/L	10.6	NA	4.41	2.55	16.3	4.15	5.15	24.6	8.30	24.7
Magnesium	mg/L	0.86	NA	0.33	0.06	2.85	0.13	0.6	1.48	0.37	4.19
Potassium	mg/L	0.17	NA	0.09	<0.01	0.30	0.02	0.17	0.02	0.05	0.02
Sodium	mg/L	0.45	NA	0.17	0.02	1.48	0.04	0.43	0.09	0.11	0.47
Aluminum	µg/L	7	NA	6	4	4	2	6	5	5	6
Antimony	µg/L	<4	NA	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L	2	NA	<1	<1	2	<1	3	2	1	6
Beryllium	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	µg/L	<10	NA	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	20	NA	2	7	9	8	2	9	5	13
Iron	µg/L	18	NA	11	<5	10	<5	<5	40	13	46
Lead	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	4	NA	4	1	<1	2	7	4	3	5
Mercury	µg/L	<1	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	<2	NA	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	µg/L	38	NA	8	11	40	17	17	81	42	101
Selenium	µg/L	<2	NA	1	<1	<1	<1	<1	<1	<1	<1
Silver	µg/L	170	NA	7	19	9	12	17	24	7	32
Silver, Dissolved	µg/L	115	NA	5	14	<2	6	2	<8	<8	<8
Zinc	µg/L	98	NA	12	9	17	28	111	72	49	126

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
Total Organic Carbon (Sievers)											
Total Inorganic Carbon	mg/L	NA	8.36	3.53	2.27	11.4	2.88	3.95	14.4	5.24	4.31
Total Organic Carbon	mg/L	NA	4.24	0.25	0.25	0.31	0.28	0.48	1.82	0.26	20.7
Volatile Organics											
Acetone	µg/L	NA	<100	10	8	<2	<2	<2	27	<2	36
Acryloniltrile	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	NA	NA	<4	<4	<4	<4	<4	<4	<4	<4
Bromodichloromethane	µg/L	NA	NA	<0.4	<0.4	0.5	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
n-Butylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	µg/L	NA	NA	1.7	1.1	0.7	0.9	0.8	<0.4	<0.4	<0.4
Chloromethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
2-Chlorotoluene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	NA	NA	<0.4	<0.4	0.8	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane (EDB)	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
trans-1,3-Dichloropropene	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl ether	µg/L	NA	NA	<2	2	<2	2	<2	<2	<2	<2
Ethylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Hexachloroethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
2-Hexanone	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Iodomethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Methyl acrylate	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	NA	NA	<0.4	<0.4	<0.4	0.5	0.6	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
2-Nitropropane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Pentachloroethane	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
n-Propylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	NA	NA	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4
Tetrahydrofuran	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2
m&p-Xylene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	0.7	<0.4	<0.4
o-Xylene	µg/L	NA	NA	0.4	0.4	1.1	0.4	0.6	0.7	<0.4	0.4
Volatile Organics - Non-Targets (Tentatively Identified Cor											
Dimethoxymethane (Formal)	µg/L	NA	NA	not found	not found	not found	not found	not found	not found	not found	not found

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
Extractable Organics											
Acetophenone	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Benzaldehyde	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Benzoic acid	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
Benzothiazole	µg/L	NA	NA	<4	<8	<8	<8	12	18	7	8
Benzyl alcohol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Benzyl butyl phthlate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Butoxyethanol	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
2-(2-Butoxyethoxy)ethanol	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
2-(2-Butoxyethoxy)ethyl acetate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
n-Butylpalmitate	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Butylated hydroxyanisole (BHA)	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N-Butylbenzenesulfonamide	µg/L	NA	NA	<4	<8	<8	<8	<4	4	<4	80
3-tert-Butylphenol	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
Caffeine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
tris-2-Chloroethyl phosphate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Cholesterol	µg/L	NA	NA	<32	<64	<64	<64	<32	<32	<32	<32
o-Cresol (2-Methylphenol)	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Cyclododecane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Decamethylcyclopentasiloxane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Decanoic acid	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2,4-Di-t-butylphenol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
1,4 Diacetylbenzene	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Dibutylformamide	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Dibutyl phthalate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Dibutylamine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Diethyl-m-toluamide	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Diethylphthalate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Diethylene glycol monoethyl ether	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Diethylformamide	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
Diiodomethane (Methyl iodide)	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Diisopropyl adipate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Dimethyl phthalate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Dimethyl acetamide	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Dimethylbenzylamine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N,N-Dimethylformamide	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Dipropylene glycol methyl ether	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Dodecamethylcyclohexasiloxane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Ethoxyethanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Ethyl-1-hexanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Ethylhexanoic acid	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
bis-2-Ethylhexyl adipate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	NA	NA	<4	<4	<8	<8	<4	<4	<4	<4
4-Ethylmorpholine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
1-Formylpiperidine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Heptanoic acid	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Heptanone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
gamma-Hexalactone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Hexanoic acid	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
2-Hexanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Hydroxybenzothiazole	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Ibuprofen	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Iodoform	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Isophorone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
4-Isopropylphenol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Lauramide	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Lauric acid (Dodecanoic acid)	µg/L	NA	NA	<120	<240	<240	<240	<120	<120	<120	<120
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Mercaptobenzothiazole	µg/L	NA	NA	<40	<80	<80	<80	<40	<40	<40	<40
2-Methyl-2,4-pentanediol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
1-Methyl-2-pyrrolidinone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Methyl-4-hydroxybenzoate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Methyl sulfone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Methyl butyric acid	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
2-Methylthiobenzothiazole	µg/L	NA	NA	<4	<8	<8	<8	15	10	5	5
Monomethyl phthalate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Myristic acid	µg/L	NA	NA	<24	<48	<48	<48	<24	<24	<24	<24
(+)-Neomenthol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Nicotine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Nonadecane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Nonanoic acid	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
1-Octadecanol	µg/L	NA	NA	<12	<24	<24	<24	<12	<12	<12	<12
Octamethylcyclotetrasiloxane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Octanoic acid	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
4-tert-Octylphenol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Oleic acid	µg/L	NA	NA	<40	<80	<80	<80	<40	<40	<40	<40
Oxindole	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Palmitic acid	µg/L	NA	NA	<120	<240	<240	<240	<120	<120	<120	<120
Palmitoleic acid	µg/L	NA	NA	<100	<200	<200	<200	<100	<100	<100	<100
Pentacosane	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
sec-Phenethyl alcohol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Phenol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Phenoxyethanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
N-Phenyl-2-naphthylamine	µg/L	NA	NA	<4	<8	<8	<8	<4	11	<4	5
2-Phenyl-2-propanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Phenylacetic acid	µg/L	NA	NA	<16	<32	<32	<32	<16	<16	<16	<16
Phenethyl alcohol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
2-Phenylphenol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Salicyclic Acid	µg/L	NA	NA	<32	<64	<64	<64	<32	<32	<32	<32
trans-Squalene	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Stearic acid	µg/L	NA	NA	<100	<200	<200	<200	<100	<100	<100	<100
1-Tetradecanol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Tetramethylsuccinonitrile	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Tetramethyl thiourea	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Tetramethylurea	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
Thymol	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Tributylamine	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Tributyl phosphate	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Triethyl phosphate	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Tripropylene glycol monomethyl ether	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Undecanoic acid	µg/L	NA	NA	<24	<48	<48	<48	<24	<24	<24	<24
2-Undecanone	µg/L	NA	NA	<4	<8	<8	<8	<4	<4	<4	<4
Valeric acid (Pentanoic acid)	µg/L	NA	NA	<24	<48	<48	<48	<24	<24	<24	<24
Vanillin	µg/L	NA	NA	<8	<16	<16	<16	<8	<8	<8	<8
Alcohols (DAI/GC/MS)											
1-Butanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	3060
Methanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100
Glycols (DAI/GC/MS)											
1,2-Ethanediol (Ethylene glycol)	µg/L	NA	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	NA	<500	<500	<500	<500	<500	<500	<500	<500	<500
Carboxylates (CE)											
Acetate	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Formate	µg/L	NA	<125	<125	<125	<125	<125	<125	4360	<125	61800
Glycolate	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Lactate	µg/L	NA	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Propionate	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Aldehydes											
Formaldehyde	µg/L	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		Soyuz 16/Exp. 17		ISS ULF2/Exp. 18					ISS 15A/Exp. 18		
Sample Location		SRV-K Hot (RSA Drink	SRV-K Warm (RSA Drink	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		27-Aug-08	27-Aug-08	02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009
Analysis/Sample ID	Units	20081208012	20081208013	20081202003	20081202004	20081202006	20081202009	20081202010	20090330021	20090330022	20090330025
Amines (CE)											
Ethylamine	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	NA	<125	<125	<125	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)											
Urea	µg/L	NA	<800	<800	<800	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	NA	<300	<4	<8	<8	<300	<4	29	<4	1350
Organic Carbon Recovery	percent	NA	0.00	2.66	2.65	0.37	0.66	0.15	66.09	2.66	90.17
Unaccounted Organic Carbon	mg/L	NA	4.24	0.25	0.25	0.31	0.27	0.48	0.62	0.26	2.04

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
Physical Characteristics						
pH	pH units	147	292	168	60	41
Conductivity	µS/cm	6.55	7.29	7.38	7.49	6.57
Turbidity	NTU	1.0	0.6	0.5	0.6	0.6
Total Dissolved Solids	mg/L	NA	164	100	NA	12
Iodine (LCV)						
Total I	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Anions (IC/ISE)						
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	3.73	8.01	0.31	0.28	0.22
Fluoride	mg/L	<0.1	<0.1	0.31	<0.1	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	<0.11	0.12	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	12.7	42.0	<0.75	<0.75	<0.75
Cations (IC)						
Ammonia as Nitrogen (NH3-N)	mg/L	0.912	0.110	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	0.014	<0.002	<0.002	<0.002
Metals (ICP/MS)						
Calcium	mg/L	19.8	37.9	24.8	11.1	6.41
Magnesium	mg/L	4.15	9.36	3.35	0.40	0.18
Potassium	mg/L	1.03	4.06	0.03	<0.01	<0.01
Sodium	mg/L	2.63	4.80	0.33	0.04	0.02
Aluminum	µg/L	40	25	2	3	<2
Antimony	µg/L	<2	<2	<2	<2	<2
Arsenic	µg/L	<1	<1	<1	<1	<1
Barium	µg/L	7	22	2	3	2
Beryllium	µg/L	<1	<1	<1	<1	<1
Cadmium	µg/L	<1	<1	<1	<1	<1
Chromium	µg/L	<5	<5	<5	<5	<5
Cobalt	µg/L	<1	<1	<1	<1	<1
Copper	µg/L	14	9	7	10	3
Iron	µg/L	29	48	36	15	<5
Lead	µg/L	1	3	<1	<1	<1
Manganese	µg/L	32	116	3	2	2
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	<1	<1	<1	<1	<1
Nickel	µg/L	56	40	57	38	30
Selenium	µg/L	<1	<1	<1	<1	<1
Silver	µg/L	49	34	17	19	14
Silver, Dissolved	µg/L	5	<2	3	3	2
Zinc	µg/L	58	273	51	100	103

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
Total Organic Carbon (Sievers)						
Total Inorganic Carbon	mg/L	14.3	24.4	9.21	7.11	5.50
Total Organic Carbon	mg/L	0.55	2.30	12.1	1.38	0.39
Volatile Organics						
Acetone	µg/L	<2	<2	25	<2	<2
Acryloniltrile	µg/L	<2	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2	<2
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	<4	<4	<4	<4	<4
Bromodichloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	<2	<2	<2	<2	<2
Bromomethane	µg/L	<2	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	<2	<2	<2
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	<2	<2	<2	<2	<2
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	<10	<10	<10	<10	<10
Chlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	<2	<2	<2	<2	<2
Chloroform	µg/L	<0.4	20.5	<0.4	<0.4	<0.4
Chloromethane	µg/L	<2	<2	<2	<2	<2
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2	<2
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2	<2
Diethyl ether	µg/L	<2	<2	<2	4	3
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	µg/L	<2	<2	<2	<2	<2
2-Hexanone	µg/L	<2	<2	<2	<2	<2
Iodomethane	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	<2	<2	<2	<2	<2
Methyl acrylate	µg/L	<2	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	<2	<2	<2	<2	<2
2-Nitropropane	µg/L	<2	<2	<2	<2	<2
Pentachloroethane	µg/L	<2	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10	<10
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	µg/L	<2	<2	<2	<2	<2
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	<2	<2	<2	<2	<2
Vinyl Chloride	µg/L	<2	<2	<2	<2	<2
m&p-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
o-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4
Volatile Organics - Non-Targets (Tentatively Identified Co						
Dimethoxymethane (Formal)	µg/L	not found	not found	not found	not found	132

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
Extractable Organics						
Acetophenone	µg/L	<16	<8	<8	<16	<8
Benzaldehyde	µg/L	<8	<4	<4	<8	<4
Benzoic acid	µg/L	<24	<12	<12	<24	<12
Benzothiazole	µg/L	8	8	<4	<8	6
Benzyl alcohol	µg/L	<8	<4	<4	<8	<4
Benzyl butyl phthlate	µg/L	<8	<4	<4	<8	<4
2-Butoxyethanol	µg/L	<16	<8	<8	<16	<8
2-(2-Butoxyethoxy)ethanol	µg/L	<16	<8	<8	<16	<8
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<8	<4	<4	<8	<4
n-Butylpalmitate	µg/L	<16	<8	<8	<16	<8
Butylated hydroxyanisole (BHA)	µg/L	<8	<4	<4	<8	<4
N-Butylbenzenesulfonamide	µg/L	14	4	52	8	4
3-tert-Butylphenol	µg/L	<24	<12	<12	<24	<12
Caffeine	µg/L	<8	<4	<4	<8	<4
tris-2-Chloroethyl phosphate	µg/L	<8	<4	<4	11	<4
Cholesterol	µg/L	<64	<32	<32	<64	<32
o-Cresol (2-Methylphenol)	µg/L	<8	<4	<4	<8	<4
Cyclododecane	µg/L	<8	<4	<4	<8	<4
Decamethylcyclopentasiloxane	µg/L	<8	<4	<4	<8	<4
Decanoic acid	µg/L	<16	<8	<8	<16	<8
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<8	<4	<4	<8	<4
2,4-Di-t-butylphenol	µg/L	<8	<4	<4	<8	<4
1,4 Diacetylbenzene	µg/L	<8	<4	<4	<8	<4
N,N-Dibutylformamide	µg/L	<8	<4	<4	<8	<4
Dibutyl phthalate	µg/L	<8	<4	<4	9	<4
Dibutylamine	µg/L	<8	<4	<4	<8	<4
N,N-Diethyl-m-toluamide	µg/L	<8	<4	<4	<8	<4
Diethylphthalate	µg/L	<8	<4	<4	<8	<4
Diethylene glycol monoethyl ether	µg/L	<8	<4	<4	<8	<4
N,N-Diethylformamide	µg/L	<24	<12	<12	<24	<12
Diiodomethane (Methyl iodide)	µg/L	<8	<4	<4	<8	<4
Diisopropyl adipate	µg/L	<8	<4	<4	<8	<4
Dimethyl phthalate	µg/L	<8	<4	<4	<8	<4
N,N-Dimethyl acetamide	µg/L	<8	<4	<4	<8	<4
N,N-Dimethylbenzylamine	µg/L	<8	<4	<4	<8	<4
N,N-Dimethylformamide	µg/L	<16	<8	<8	<16	<8
Dipropylene glycol methyl ether	µg/L	<8	<4	<4	<8	<4
Dodecamethylcyclohexasiloxane	µg/L	<8	<4	<4	<8	<4
2-Ethoxyethanol	µg/L	<8	<4	<4	<8	<4
2-Ethyl-1-hexanol	µg/L	<8	<4	<4	<8	<4
2-Ethylhexanoic acid	µg/L	<8	<4	<4	<8	<4
bis-2-Ethylhexyl adipate	µg/L	<8	<4	<4	<8	<4
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	9	<4	<4	<8	<4
4-Ethylmorpholine	µg/L	<8	<4	<4	<8	<4
1-Formylpiperidine	µg/L	<8	<4	<4	<8	<4
Heptanoic acid	µg/L	<8	<4	<4	<8	<4
2-Heptanone	µg/L	<8	<4	<4	<8	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
gamma-Hexalactone	µg/L	<8	<4	<4	<8	<4
Hexanoic acid	µg/L	<16	<8	<8	<16	<8
2-Hexanol	µg/L	<8	<4	<4	<8	<4
2-Hydroxybenzothiazole	µg/L	<8	<4	8	24	15
Ibuprofen	µg/L	<8	<4	<4	<8	<4
Iodoform	µg/L	<8	<4	<4	<8	<4
Isophorone	µg/L	<8	<4	<4	<8	<4
4-Isopropylphenol	µg/L	<8	<4	<4	<8	<4
Lauramide	µg/L	<8	<4	<4	<8	<4
Lauric acid (Dodecanoic acid)	µg/L	<240	<120	<120	<240	<120
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<8	<4	<4	<8	<4
2-Mercaptobenzothiazole	µg/L	<80	<40	<40	<80	<40
2-Methyl-2,4-pentanediol	µg/L	<8	<4	<4	<8	<4
1-Methyl-2-pyrrolidinone	µg/L	<8	<4	<4	<8	<4
Methyl-4-hydroxybenzoate	µg/L	<8	<4	<4	<8	<4
Methyl sulfone	µg/L	<8	<4	<4	<8	<4
2-Methyl butyric acid	µg/L	<24	<12	<12	<24	<12
2-Methylthiobenzothiazole	µg/L	9	5	7	11	11
Monomethyl phthalate	µg/L	<8	<4	<4	<8	<4
Myristic acid	µg/L	<48	<24	<24	<48	<24
(+)-Neomenthol	µg/L	<8	<4	<4	<8	<4
Nicotine	µg/L	<8	<4	<4	<8	<4
Nonadecane	µg/L	<8	<4	<4	<8	<4
Nonanoic acid	µg/L	<24	<12	<12	<24	<12
1-Octadecanol	µg/L	<24	<12	<12	<24	<12
Octamethylcyclotetrasiloxane	µg/L	<8	<4	<4	<8	<4
Octanoic acid	µg/L	<16	<8	<8	<16	<8
4-tert-Octylphenol	µg/L	<8	<4	<4	<8	<4
Oleic acid	µg/L	<80	<40	<40	<80	<40
Oxindole	µg/L	<8	<4	<4	<8	<4
Palmitic acid	µg/L	<240	<120	<120	<240	<120
Palmitoleic acid	µg/L	<200	<100	<100	<200	<100
Pentacosane	µg/L	<8	<4	<4	<8	<4
sec-Phenethyl alcohol	µg/L	<8	<4	<4	<8	<4
Phenol	µg/L	<8	<4	<4	<8	<4
2-Phenoxyethanol	µg/L	<8	<4	<4	<8	<4
N-Phenyl-2-naphthylamine	µg/L	<8	6	<4	14	<4
2-Phenyl-2-propanol	µg/L	<8	<4	<4	<8	<4
2-Phenylacetic acid	µg/L	<32	<16	<16	<32	<16
Phenethyl alcohol	µg/L	<8	<4	<4	<8	<4
2-Phenylphenol	µg/L	<8	<4	<4	<8	<4
Salicyclic Acid	µg/L	<64	<32	<32	<64	<32
trans-Squalene	µg/L	<16	<8	<8	<16	<8
Stearic acid	µg/L	<200	<100	<100	<200	<100
1-Tetradecanol	µg/L	<8	<4	<4	<8	<4
Tetramethylsuccinonitrile	µg/L	<8	<4	<4	<8	<4
Tetramethyl thiourea	µg/L	<8	<4	<4	<8	<4
Tetramethylurea	µg/L	<8	<4	<4	<8	<4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
Thymol	µg/L	<8	<4	<4	<8	<4
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<8	<4	<4	<8	<4
Tributylamine	µg/L	<8	<4	<4	<8	<4
Tributyl phosphate	µg/L	<8	<4	<4	<8	<4
Triethyl phosphate	µg/L	<16	<8	<8	<16	<8
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<16	<8	<8	<16	<8
Tripropylene glycol monomethyl ether	µg/L	<8	<4	<4	<8	<4
Undecanoic acid	µg/L	<48	<24	<24	<48	<24
2-Undecanone	µg/L	<8	<4	<4	<8	<4
Valeric acid (Pentanoic acid)	µg/L	<48	<24	<24	<48	<24
Vanillin	µg/L	<16	<8	<8	<16	<8
Alcohols (DAI/GC/MS)						
1-Butanol	µg/L	<100	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100	<100
Ethanol	µg/L	<100	<100	<100	<100	<100
Methanol	µg/L	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	<100	<100	<100
Glycols (DAI/GC/MS)						
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500	<500
Carboxylates (CE)						
Acetate	µg/L	<125	<125	<125	<125	<125
Formate	µg/L	<125	<125	43000	3030	<125
Glycolate	µg/L	<125	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125	<125
Aldehydes						
Formaldehyde	µg/L	<2	<2	<2	<2	<2

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 1. ISS SRV-K Potable Water (Regenerated) Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20
Sample Location		SRV-K Warm	SRV-K Hot	SRV-K Warm	SRV-K Hot	SRV-K Warm
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009
Analysis/Sample ID	Units	20090803009	20090803011	20090803013	20090803015	20090914005
Amines (CE)						
Ethylamine	µg/L	<125	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)						
Urea	µg/L	<800	<800	<800	<800	<800
Caprolactam	µg/L	<8	<4	<4	<8	<4
Organic Carbon Recovery	percent	4.38	0.75	93.19	60.75	21.97
Unaccounted Organic Carbon	mg/L	0.53	2.28	0.82	0.54	0.30

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location					SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Potable Water Maximum Contaminant Level	Maximum Contaminant Level	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted			30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
Physical Characteristics											
pH	pH units	U.S.	5.5-9.0	MORD	7.00	7.39	7.90	7.86	7.74	8.10	NA
Conductivity	µS/cm	U.S.			279	301	272	300	296	297	NA
Turbidity	NTU	U.S.	1.5*	MORD	3.1	2.8	5.0	NA	9.5	9.0	NA
Total Dissolved Solids	mg/L	U.S.	100 (1,000#)	MORD	147	160	NA	NA	166	162	NA
Iodine (LCV)											
Total I	mg/L	U.S.	0.05	MORD	<0.05	<0.05	<0.05	NA	<0.05	<0.05	NA
Anions (IC/ISE)											
Bromide	mg/L	U.S.			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	U.S.	250	MORD	7.75	8.11	8.24	8.05	8.04	8.10	9.5
Fluoride	mg/L	U.S.	1.5/4	MORD/EPA	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1
Nitrate as Nitrogen (NO3-N)	mg/L	U.S.	10	MORD/EPA	0.2	0.18	<0.11	0.13	0.14	0.17	0.22
Nitrite as Nitrogen (NO2-N)	mg/L	U.S.	1	EPA	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	NA
Phosphate as P (PO4-P)	mg/L	U.S.			<0.24	<0.24	NA	<0.04	<0.24	<0.24	<0.24
Sulfate	mg/L	U.S.	250	MORD	44.8	46.7	24.3	36.8	37.1	36.9	40.2
Cations (IC)											
Ammonia as Nitrogen (NH3-N)	mg/L	U.S.	2/1	MORD/SWEG	0.004	0.006	<0.002	<0.002	<0.002	<0.002	0.016
Lithium	mg/L	U.S.			0.009	0.009	0.006	0.006	0.004	0.005	0.004
Metals (ICP/MS)											
Calcium	mg/L	U.S.	100	MORD	36.4	37.2	37.4	38.2	40.0	40.7	39.1
Magnesium	mg/L	U.S.	50	MORD	9.29	9.39	8.55	9.57	9.65	9.98	8.97
Potassium	mg/L	U.S.			3.48	3.55	2.68	2.74	2.83	2.90	2.88
Sodium	mg/L	U.S.			4.90	4.99	4.53	5.37	5.28	5.44	5.40
Aluminum	µg/L	U.S.			37	34	63	268	144	68	40
Antimony	µg/L	U.S.	6	EPA	<2	<2	<2	<4	<8	<8	<2
Arsenic	µg/L	U.S.	10	MORD/EPA	<1	<1	<1	<4	<4	<4	<2
Barium	µg/L	U.S.	1,000/10,000	MORD/SWEG	22	21	15	23	23	23	23
Beryllium	µg/L	U.S.	4	EPA	<1	<1	<1	<4	<4	<4	<2
Cadmium	µg/L	U.S.	5/22	MORD/SWEG	<1	<1	<1	<4	<4	<4	2
Chromium	µg/L	U.S.	100	MORD/EPA	<5	<5	<5	<20	<20	<20	<10
Cobalt	µg/L	U.S.			<1	<1	<1	<4	<4	<4	<2
Copper	µg/L	U.S.	1,000/1,300	MORD/EPA	5	5	3	6	4	4	6
Iron	µg/L	U.S.	300	MORD	70	70	54	79	104	83	36
Lead	µg/L	U.S.	50/15	MORD/EPA	<1	<1	<1	<4	<4	<4	<2
Manganese	µg/L	U.S.	50/300	MORD/SWEG	46	49	104	129	130	126	121
Mercury	µg/L	U.S.	2	MORD/EPA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Molybdenum	µg/L	U.S.	40	EPA HA	<1	<1	<1	<4	<4	<4	<2
Nickel	µg/L	U.S.	100/300	MORD/SWEG	70	24	21	<4	<4	<4	5
Selenium	µg/L	U.S.	10/50	MORD/EPA	<1	<1	<1	<4	<4	<4	<2
Silver	µg/L	U.S.	500/400	MORD/SWEG	669	735	347	698	834	698	102

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location			Potable Water Maximum	Maximum	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
Silver, Dissolved	µg/L	U.S.			559	599	189	218	200	201	16
Zinc	µg/L	U.S.	5,000/2,000	MORD/SWEG	119	118	33	47	31	51	404
Total Organic Carbon (Sievers)											
Total Inorganic Carbon	mg/L	U.S.			24.8	25.6	28.0	28.6	28.8	26.5	25.3
Total Organic Carbon	mg/L	U.S.	20**	MORD	2.44	2.48	0.32	2.83	1.91	1.89	3.73
Volatile Organics											
Acetone	µg/L	U.S.	15,000	SWEG	<2	<2	4	3	<2	<2	<100
Acryloniltrile	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Allyl chloride (3-Chloropropene)	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Benzene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Bromobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Bromochloromethane	µg/L	U.S.	90	EPA HA	<4	<4	<4	<4	<4	<4	NA
Bromodichloromethane	µg/L	U.S.	THM 80	EPA	1.4	1.4	<0.4	1.6	2.2	2	NA
Bromoform	µg/L	U.S.	THM 80	EPA	<2	<2	<2	<2	<2	<2	NA
Bromomethane	µg/L	U.S.	10	EPA HA	<2	<2	<2	<2	<2	<2	NA
2-Butanone (Methyl ethyl ketone)	µg/L	U.S.	4,000	EPA HA	<2	<2	<2	<2	<2	<2	NA
n-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
sec-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
tert-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Carbon disulfide	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Carbon tetrachloride	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Chloroacetonitrile	µg/L	U.S.			<10	<10	<10	<10	<10	<10	NA
Chlorobenzene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1-Chlorobutane (Butyl chloride)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Chloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Chloroform	µg/L	U.S.	6,500/THM 80	SWEG/EPA	39.8	44.6	1.3	25.8	33.7	38.3	NA
Chloromethane	µg/L	U.S.	30	EPA HA	NA	NA	NA	<2	<2	<2	NA
2-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
4-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dibromochloromethane	µg/L	U.S.	THM 80	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	U.S.	0.2	EPA	<2	<2	<2	<2	<2	<2	NA
1,2-Dibromoethane (EDB)	µg/L	U.S.	0.05	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dibromomethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dichlorobenzene	µg/L	U.S.	600	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3-Dichlorobenzene	µg/L	U.S.	600	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,4-Dichlorobenzene	µg/L	U.S.	75	EPA	<0.4	<0.4	<0.4	NA	<0.4	<0.4	NA
trans-1,4-Dichloro-2-butene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dichlorodifluoromethane	µg/L	U.S.	1,000	EPA HA	NA	NA	NA	<2	<2	<2	NA
1,1-Dichloroethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1-Dichloroethene	µg/L	U.S.	7	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
cis1,2-Dichloroethene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
trans-1,2-Dichloroethene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location			Potable Water Maximum	Maximum	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
1,2-Dichloropropane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
2,2-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1-Dichloropropanone	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
1,1-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
cis-1,3-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
trans-1,3-Dichloropropene	µg/L	U.S.			<2	<2	<2	NA	<2	<2	NA
Diethyl ether	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Ethylbenzene	µg/L	U.S.	700	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Ethyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Hexachlorobutadiene	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	<2	NA
Hexachloroethane	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	<2	NA
2-Hexanone	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Iodomethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Isopropylbenzene (Cumene)	µg/L	U.S.	4,000	EPA DWEL	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
4-Isopropyltoluene (Cymene)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Methacrylonitrile	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Methyl acrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Methyl-t-butylether (MTBE)	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Methylene chloride (Dichloromethane)	µg/L	U.S.	15,000/5	SWEG/EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Methyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
4-Methyl-2-pentanone	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Naphthalene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Nitrobenzene	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
2-Nitropropane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Pentachloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Propionitrile (Ethyl cyanide)	µg/L	U.S.			<10	<10	<10	<10	<10	<10	NA
n-Propylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Styrene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,1,2-Tetrachloroethane	µg/L	U.S.	70	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,2,2-Tetrachloroethane	µg/L	U.S.	0.3	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Tetrachloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Tetrahydrofuran	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Toluene	µg/L	U.S.	1,000	EPA	0.5	<0.4	0.5	<0.4	<0.4	<0.4	NA
1,2,3-Trichlorobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,4-Trichlorobenzene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,1-Trichloroethane	µg/L	U.S.	200	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,2-Trichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Trichloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Trichlorofluoromethane	µg/L	U.S.	2,000	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,3-Trichloropropane	µg/L	U.S.	40	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,4-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3,5-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Vinyl Acetate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	NA
Vinyl Chloride	µg/L	U.S.	2	EPA	<2	<2	<2	<2	<2	<2	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location			Potable Water Maximum	Maximum	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
m&p-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	1	<0.4	<0.4	<0.4	<0.4	<0.4	NA
o-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	0.5	<0.4	0.5	1.8	1.9	1.9	NA
Extractable Organics											
Acetophenone	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Benzaldehyde	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Benzoic acid	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
Benzothiazole	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Benzyl alcohol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Benzyl butyl phthlate	µg/L	U.S.	7,000	EPA DWEL	<4	<8	<8	<20	<4	<4	NA
2-Butoxyethanol	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
2-(2-Butoxyethoxy)ethanol	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
2-(2-Butoxyethoxy)ethyl acetate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
n-Butylpalmitate	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Butylated hydroxyanisole (BHA)	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N-Butylbenzenesulfonamide	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
3-tert-Butylphenol	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
Caffeine	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
tris-2-Chloroethyl phosphate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Cholesterol	µg/L	U.S.			<32	<64	<64	<160	<32	<32	NA
o-Cresol (2-Methylphenol)	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Cyclododecane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Decamethylcyclopentasiloxane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Decanoic acid	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2,4-Di-t-butylphenol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
1,4 Diacetylbenzene	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N,N-Dibutylformamide	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Dibutyl phthalate	µg/L	U.S.	40,000/4,000	SWEG/EPA DWEL	<4	<8	<8	<20	<4	<4	NA
Dibutylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<8	<20	<4	<4	NA
N,N-Diethyl-m-toluamide	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Diethylphthalate	µg/L	U.S.	30,000	EPA DWEL	<4	<8	<8	<20	<4	<4	NA
Diethylene glycol monoethyl ether	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N,N-Diethylformamide	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
Diiodomethane (Methyl iodide)	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Diisopropyl adipate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Dimethyl phthalate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N,N-Dimethyl acetamide	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N,N-Dimethylbenzylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<8	<20	<4	<4	NA
N,N-Dimethylformamide	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Dipropylene glycol methyl ether	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Dodecamethylcyclohexasiloxane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Ethoxyethanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Ethyl-1-hexanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Ethylhexanoic acid	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location			Potable Water Maximum	Maximum	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
bis-2-Ethylhexyl adipate	µg/L	U.S.	400	EPA	<4	<8	<8	<20	<4	<4	NA
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	U.S.	20,000/6	SWEG/EPA	<4	<8	<8	<20	<4	<4	NA
4-Ethylmorpholine	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
1-Formylpiperidine	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Heptanoic acid	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Heptanone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
gamma-Hexalactone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Hexanoic acid	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
2-Hexanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Hydroxybenzothiazole	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Ibuprofen	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Iodoform	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Isophorone	µg/L	U.S.	100	EPA HA	<4	<8	<8	<20	<4	<4	NA
4-Isopropylphenol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Lauramide	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Lauric acid (Dodecanoic acid)	µg/L	U.S.			<120	<240	<240	<600	<120	<120	NA
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Mercaptobenzothiazole	µg/L	U.S.	30,000	SWEG	<40	<80	<80	<200	<40	<40	NA
2-Methyl-2,4-pentanediol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
1-Methyl-2-pyrrolidinone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Methyl-4-hydroxybenzoate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Methyl sulfone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Methyl butyric acid	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
2-Methylthiobenzothiazole	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Monomethyl phthalate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Myristic acid	µg/L	U.S.			<24	<48	<48	<120	<24	<24	NA
(+)-Neomenthol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Nicotine	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Nonadecane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Nonanoic acid	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
1-Octadecanol	µg/L	U.S.			<12	<24	<24	<60	<12	<12	NA
Octamethylcyclotetrasiloxane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Octanoic acid	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
4-tert-Octylphenol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Oleic acid	µg/L	U.S.			<40	<80	<80	<200	<40	<40	NA
Oxindole	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Palmitic acid	µg/L	U.S.			<120	<240	<240	<600	<120	<120	NA
Palmitoleic acid	µg/L	U.S.			<100	<200	<200	<500	<100	<100	NA
Pentacosane	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
sec-Phenethyl alcohol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Phenol	µg/L	U.S.	1,000/4,000	MORD/SWEG	<4	<8	<8	<20	<4	<4	NA
2-Phenoxyethanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
N-Phenyl-2-naphthylamine	µg/L	U.S.	260,000	SWEG	<4	<8	<8	<20	<4	<4	NA
2-Phenyl-2-propanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Phenylacetic acid	µg/L	U.S.			<16	<32	<32	<80	<16	<16	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location					SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Potable Water Maximum Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
Phenethyl alcohol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
2-Phenylphenol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Salicyclic Acid	µg/L	U.S.			<32	<64	<64	<160	<32	<32	NA
trans-Squalene	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Stearic acid	µg/L	U.S.			<100	<200	<200	<500	<100	<100	NA
1-Tetradecanol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Tetramethylsuccinonitrile	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Tetramethyl thiourea	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Tetramethylurea	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Thymol	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Tributylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<4	<8	<8	<20	<4	<4	NA
Tributyl phosphate	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Triethyl phosphate	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Tripropylene glycol monomethyl ether	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Undecanoic acid	µg/L	U.S.			<24	<48	<48	<120	<24	<24	NA
2-Undecanone	µg/L	U.S.			<4	<8	<8	<20	<4	<4	NA
Valeric acid (Pentanoic acid)	µg/L	U.S.			<24	<48	<48	<120	<24	<24	NA
Vanillin	µg/L	U.S.			<8	<16	<16	<40	<8	<8	NA
Alcohols (DAI/GC/MS)											
1-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
Methanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission					ISS 1E/Exp. 16		ISS 1JA/Exp. 16	Soyuz 15/Exp. 17	1J/Exp. 17		Soyuz 16/Exp. 17
Sample Location			Potable Water Maximum	Maximum	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)	SVO-ZV	SVO-ZV	SVO-ZV (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water (#1)	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	30-Nov-2007	08-Jan-2008	26-Feb-2008	16-Apr-2008	13-Apr-2008	30-May-2008	21-Oct-08
Analysis/Sample ID	Units	by	(MCL)	Source	20080221020	20080221023	20080328009	20080502005	20080616013	20080616015	20081208014
Glycols (DAI/GC/MS)											
1,2-Ethanediol (Ethylene glycol)	µg/L	U.S.	12000/14000	MORD/EPA HA	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	U.S.			<500	<500	<500	<500	<500	<500	<500
Carboxylates (CE)											
Acetate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125
Formate	µg/L	U.S.	2,500,000	SWEG	<125	<125	<125	<125	<125	<125	<125
Glycolate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125
Lactate	µg/L	U.S.			<1000	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125
Propionate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125
Aldehydes											
Formaldehyde	µg/L	U.S.	12,000/1,000	SWEG/EPA HA	<2	<2	<2.0	<2	<2	<2	NA
Amines (CE)											
Ethylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<125	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)											
Urea	µg/L	U.S.			<800	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	U.S.	100,000	SWEG	<4	<8	<300	<300	<4	<4	<300
Organic Carbon Recovery	percent	U.S.			0.24	0.19	1.10	0.22	0.28	0.30	0.00
Unaccounted Organic Carbon	mg/L	U.S.			2.43	2.48	0.32	2.82	1.90	1.88	3.73

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
Physical Characteristics										
pH	pH units	311	311	310	311	206	183	190	184	NA
Conductivity	µS/cm	6.79	7.39	7.43	7.71	7.33	6.52	6.83	6.89	NA
Turbidity	NTU	6.2	6.4	6.6	4.5	0.4	1.9	2.2	2.3	NA
Total Dissolved Solids	mg/L	NA	NA	192	NA	38	115	118	110	NA
Iodine (LCV)										
Total I	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
Anions (IC/ISE)										
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Chloride	mg/L	8.86	8.83	8.89	8.92	<0.15	<0.15	<0.15	<0.15	NA
Fluoride	mg/L	<0.1	<0.1	<0.1	0.1	0.5	0.46	0.48	0.50	NA
Nitrate as Nitrogen (NO3-N)	mg/L	0.18	0.26	0.16	0.15	<0.11	<0.11	<0.11	<0.11	NA
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	NA
Sulfate	mg/L	38.3	38.2	38.3	38.3	<0.75	<0.75	<0.75	<0.75	NA
Cations (IC)										
Ammonia as Nitrogen (NH3-N)	mg/L	0.006	0.013	0.011	0.013	0.002	0.039	0.078	0.23	NA
Lithium	mg/L	0.005	<0.002	0.005	0.005	<0.002	<0.002	<0.002	<0.002	NA
Metals (ICP/MS)										
Calcium	mg/L	39.7	38.9	39.1	39.9	28.5	28.1	28.9	27.3	NA
Magnesium	mg/L	9.53	9.71	9.80	9.78	4.36	4.95	4.83	4.80	NA
Potassium	mg/L	2.84	2.90	2.91	2.90	0.03	<0.01	0.01	0.01	NA
Sodium	mg/L	5.40	5.52	5.53	5.56	0.45	0.49	0.50	0.49	NA
Aluminum	µg/L	57	64	59	68	18	37	18	6	8
Antimony	µg/L	<2	<2	<2	<2	<2	<4	<2	<2	<4
Arsenic	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Barium	µg/L	22	21	21	21	3	3	3	3	4
Beryllium	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Cadmium	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Chromium	µg/L	<5	<5	<5	<5	<5	<10	<5	<5	<10
Cobalt	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Copper	µg/L	3	3	3	3	1	<2	<1	<1	4
Iron	µg/L	48	42	31	32	37	52	52	58	29
Lead	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Manganese	µg/L	121	121	120	120	2	3	3	5	2
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
Molybdenum	µg/L	<1	<1	<1	<1	<1	<2	<1	<1	<2
Nickel	µg/L	3	3	3	3	30	31	28	40	33
Selenium	µg/L	1	<1	<1	<1	<1	<2	<1	<1	<2
Silver	µg/L	464	457	455	334	244	304	97	51	57

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
Silver, Dissolved	µg/L	131	98	92	85	230	218	37	<8	21
Zinc	µg/L	24	25	26	25	48	38	36	115	192
Total Organic Carbon (Sievers)										
Total Inorganic Carbon	mg/L	25.1	25.7	25.5	25.6	3.65	11.3	9.84	9.94	8.09
Total Organic Carbon	mg/L	1.93	1.90	1.84	1.94	22.9	15.0	16.5	16.6	18.9
Volatile Organics										
Acetone	µg/L	<2	<2	<2	<2	54	17	105	31	<8
Acryloniltrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Bromochloromethane	µg/L	<4	<4	<4	<4	<4	<4	<4	<4	<16
Bromodichloromethane	µg/L	0.8	0.7	0.8	0.5	<0.4	<0.4	<0.4	<0.4	<1.6
Bromoform	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Bromomethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Carbon disulfide	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Chloroacetonitrile	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<40
Chlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Chloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Chloroform	µg/L	19.1	26.9	30.4	33.7	<0.4	<0.4	<0.4	<0.4	<1.6
Chloromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Diethyl ether	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Ethyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Hexachlorobutadiene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Hexachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
2-Hexanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Iodomethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Methacrylonitrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Methyl acrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	<0.4	<0.4	1.2	<0.4	<0.4	<0.4	<1.6
Methyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Nitrobenzene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
2-Nitropropane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Pentachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<40
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Tetrachloroethene	µg/L	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4	<1.6
Tetrahydrofuran	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.6
Vinyl Acetate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8
Vinyl Chloride	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<8

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
m&p-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	0.7	<0.4	<0.4	<1.6
o-Xylene	µg/L	0.5	0.4	0.4	0.4	0.4	0.5	<0.4	<0.4	<1.6
Extractable Organics										
Acetophenone	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Benzaldehyde	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Benzoic acid	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
Benzothiazole	µg/L	<8	<8	<8	<8	<4	<8	4	<8	<32
Benzyl alcohol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Benzyl butyl phthlate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Butoxyethanol	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
2-(2-Butoxyethoxy)ethanol	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
n-Butylpalmitate	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Butylated hydroxyanisole (BHA)	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N-Butylbenzenesulfonamide	µg/L	<8	<8	<8	<8	18	12	10	10	<32
3-tert-Butylphenol	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
Caffeine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
tris-2-Chloroethyl phosphate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Cholesterol	µg/L	<64	<64	<64	<64	<32	<64	<32	<64	<256
o-Cresol (2-Methylphenol)	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Cyclododecane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Decamethylcyclopentasiloxane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Decanoic acid	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2,4-Di-t-butylphenol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
1,4 Diacetylbenzene	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Dibutylformamide	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Dibutyl phthalate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Dibutylamine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Diethyl-m-toluamide	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Diethylphthalate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Diethylene glycol monoethyl ether	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Diethylformamide	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
Diiodomethane (Methyl iodide)	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Diisopropyl adipate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Dimethyl phthalate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Dimethyl acetamide	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Dimethylbenzylamine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N,N-Dimethylformamide	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Dipropylene glycol methyl ether	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Dodecamethylcyclohexasiloxane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Ethoxyethanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Ethyl-1-hexanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Ethylhexanoic acid	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
bis-2-Ethylhexyl adipate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	36
4-Ethylmorpholine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
1-Formylpiperidine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Heptanoic acid	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Heptanone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
gamma-Hexalactone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Hexanoic acid	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
2-Hexanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Hydroxybenzothiazole	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Ibuprofen	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Iodoform	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Isophorone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
4-Isopropylphenol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Lauramide	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Lauric acid (Dodecanoic acid)	µg/L	<240	<240	<240	<240	<120	<240	<120	<240	<960
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Mercaptobenzothiazole	µg/L	<80	<80	<80	<80	<40	<80	<40	<80	<320
2-Methyl-2,4-pentanediol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
1-Methyl-2-pyrrolidinone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Methyl-4-hydroxybenzoate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Methyl sulfone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Methyl butyric acid	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
2-Methylthiobenzothiazole	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Monomethyl phthalate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Myristic acid	µg/L	<48	<48	<48	<48	<24	<48	<24	<48	<192
(+)-Neomenthol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Nicotine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Nonadecane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Nonanoic acid	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
1-Octadecanol	µg/L	<24	<24	<24	<24	<12	<24	<12	<24	<96
Octamethylcyclotetrasiloxane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Octanoic acid	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
4-tert-Octylphenol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Oleic acid	µg/L	<80	<80	<80	<80	<40	<80	<40	<80	<320
Oxindole	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Palmitic acid	µg/L	<240	<240	<240	<240	<120	<240	<120	<240	<960
Palmitoleic acid	µg/L	<200	<200	<200	<200	<100	<200	<100	<200	<800
Pentacosane	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
sec-Phenethyl alcohol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Phenol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Phenoxyethanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
N-Phenyl-2-naphthylamine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Phenyl-2-propanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Phenylacetic acid	µg/L	<32	<32	<32	<32	<16	<32	<16	<32	<128

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
Phenethyl alcohol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
2-Phenylphenol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Salicyclic Acid	µg/L	<64	<64	<64	<64	<32	<64	<32	<64	<256
trans-Squalene	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Stearic acid	µg/L	<200	<200	<200	<200	<100	<200	<100	<200	<800
1-Tetradecanol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Tetramethylsuccinonitrile	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Tetramethyl thiourea	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Tetramethylurea	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Thymol	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Tributylamine	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Tributyl phosphate	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Triethyl phosphate	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Tripropylene glycol monomethyl ether	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Undecanoic acid	µg/L	<48	<48	<48	<48	<24	<48	<24	<48	<192
2-Undecanone	µg/L	<8	<8	<8	<8	<4	<8	<4	<8	<32
Valeric acid (Pentanoic acid)	µg/L	<48	<48	<48	<48	<24	<48	<24	<48	<192
Vanillin	µg/L	<16	<16	<16	<16	<8	<16	<8	<16	<64
Alcohols (DAI/GC/MS)										
1-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	<100	<100	<100	<100	2620	1340	1530	1100	<100
Methanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		02-Jul-2008	25-Jul-2008	01-Sep-2008	08-Oct-2008	11-Nov-2008	16-Dec-2008	12-Jan-2009	19-Feb-2009	05-Apr-2009
Analysis/Sample ID	Units	20081202002	20081202005	20081202007	20081202008	20081202011	20090330020	20090330023	20090330024	2009-0615-003
Glycols (DAI/GC/MS)										
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500	<500	<500	<500	<500	<500
Carboxylates (CE)										
Acetate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Formate	µg/L	<125	<125	<125	<125	80600	48600	54900	53500	52800
Glycolate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Aldehydes										
Formaldehyde	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	NA
Amines (CE)										
Ethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)										
Urea	µg/L	<800	<800	<800	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	<8	<8	<8	<8	1450	130	<4	<8	456
Organic Carbon Recovery	percent	0.13	0.16	0.19	0.20	102.05	89.9	92.12	87.72	74.59
Unaccounted Organic Carbon	mg/L	1.93	1.90	1.84	1.94	0.00	1.52	1.30	2.04	4.80

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
Physical Characteristics							
pH	pH units	197	357	194	191	196	308
Conductivity	µS/cm	6.41	7.20	7.41	7.33	6.39	6.9
Turbidity	NTU	1.5	8.1	3.0	3.5	3.4	0.2
Total Dissolved Solids	mg/L	115	204	113	NA	71	NA
Iodine (LCV)							
Total I	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anions (IC/ISE)							
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	<0.15	10.2	0.36	0.36	0.37	9.05
Fluoride	mg/L	0.52	<0.1	0.44	0.45	0.48	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	<0.11	0.16	<0.11	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	<0.75	52.1	0.92	0.99	1.13	28.3
Cations (IC)							
Ammonia as Nitrogen (NH3-N)	mg/L	0.060	<0.002	<0.002	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	0.019	<0.002	<0.002	<0.002	<0.002
Metals (ICP/MS)							
Calcium	mg/L	27.9	47.4	27.4	26.3	27.6	39.6
Magnesium	mg/L	5.10	11.7	5.31	5.29	5.06	10.2
Potassium	mg/L	<0.01	5.12	0.11	0.11	0.09	3.03
Sodium	mg/L	0.49	5.94	0.71	0.71	0.71	7.14
Aluminum	µg/L	5	58	14	11	12	96
Antimony	µg/L	<2	<2	<2	<2	<2	<8
Arsenic	µg/L	<1	<1	<1	<1	<1	<4
Barium	µg/L	3	25	2	2	2	7
Beryllium	µg/L	<1	<1	<1	<1	<1	<4
Cadmium	µg/L	<1	<1	<1	<1	<1	<4
Chromium	µg/L	<5	<5	<5	<5	<5	<4
Cobalt	µg/L	<1	<1	<1	<1	<1	<4
Copper	µg/L	<1	4	<1	2	1	<4
Iron	µg/L	38	82	46	44	32	26
Lead	µg/L	<1	<1	<1	<1	<1	<4
Manganese	µg/L	2	148	5	5	5	36
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<2
Molybdenum	µg/L	<1	<1	<1	<1	<1	<4
Nickel	µg/L	28	3	8	9	8	<4
Selenium	µg/L	<1	<1	<1	<1	<1	<4
Silver	µg/L	84	785	66	119	143	36

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
Silver, Dissolved	µg/L	28	83	<2	21	52	23
Zinc	µg/L	34	41	74	75	65	20
Total Organic Carbon (Sievers)							
Total Inorganic Carbon	mg/L	9.02	29.4	5.82	6.01	8.51	29.9
Total Organic Carbon	mg/L	17.0	1.70	18.3	18.1	15.1	0.39
Volatile Organics							
Acetone	µg/L	41	<2	32	22	31	<2
Acryloniltrile	µg/L	<2	<2	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2	<2	<2
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	<4	<4	<4	<4	<4	<4
Bromodichloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	<2	<2	<2	<2	<2	<2
Bromomethane	µg/L	<2	<2	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	6	<2	<2	<2
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	<10	<10	<10	<10	<10	<10
Chlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	<2	<2	<2	<2	<2	<2
Chloroform	µg/L	<0.4	24.2	<0.4	<0.4	<0.4	<0.4
Chloromethane	µg/L	<2	<2	<2	<2	<2	<2
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2	<2	<2
Diethyl ether	µg/L	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	<2	<2	<2	<2	<2	<2
Hexachloroethane	µg/L	<2	<2	<2	<2	<2	<2
2-Hexanone	µg/L	<2	<2	<2	<2	<2	<2
Iodomethane	µg/L	<2	<2	<2	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	<2	<2	<2	<2	<2	<2
Methyl acrylate	µg/L	<2	<2	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	0.6	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	<2	<2	<2	<2	<2	<2
2-Nitropropane	µg/L	<2	<2	<2	<2	<2	<2
Pentachloroethane	µg/L	<2	<2	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10	<10	<10
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrahydrofuran	µg/L	<2	<2	<2	<2	<2	<2
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	<2	<2	<2	<2	<2	<2
Vinyl Chloride	µg/L	<2	<2	<2	<2	<2	<2

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
m&p-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Extractable Organics							
Acetophenone	µg/L	<8	<16	<8	<16	<16	<16
Benzaldehyde	µg/L	<4	<8	<4	<8	<8	<8
Benzoic acid	µg/L	<12	<24	<12	<24	<24	<24
Benzothiazole	µg/L	<4	<8	<4	<8	<8	<8
Benzyl alcohol	µg/L	<4	<8	<4	<8	<8	<8
Benzyl butyl phthlate	µg/L	<4	<8	<4	<8	<8	<8
2-Butoxyethanol	µg/L	<8	<16	<8	<16	<16	<16
2-(2-Butoxyethoxy)ethanol	µg/L	<8	<16	<8	<16	<16	<16
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<4	<8	<4	<8	<8	<8
n-Butylpalmitate	µg/L	<8	<16	<8	<16	<16	<16
Butylated hydroxyanisole (BHA)	µg/L	<4	<8	<4	<8	<8	<8
N-Butylbenzenesulfonamide	µg/L	15	<8	72	76	72	<8
3-tert-Butylphenol	µg/L	<12	<24	<12	<24	<24	<24
Caffeine	µg/L	<4	<8	<4	<8	<8	<8
tris-2-Chloroethyl phosphate	µg/L	<4	<8	<4	12	<8	<8
Cholesterol	µg/L	<32	<64	<32	<64	<64	<64
o-Cresol (2-Methylphenol)	µg/L	<4	<8	<4	<8	<8	<8
Cyclododecane	µg/L	<4	<8	<4	<8	<8	<8
Decamethylcyclopentasiloxane	µg/L	<4	<8	<4	<8	<8	<8
Decanoic acid	µg/L	<8	<16	<8	<16	<16	<16
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<4	<8	<4	<8	<8	<8
2,4-Di-t-butylphenol	µg/L	<4	<8	<4	<8	<8	<8
1,4 Diacetylbenzene	µg/L	<4	<8	<4	<8	<8	<8
N,N-Dibutylformamide	µg/L	<4	<8	<4	<8	<8	<8
Dibutyl phthalate	µg/L	<4	<8	<4	<8	<8	<8
Dibutylamine	µg/L	<4	<8	<4	<8	<8	<8
N,N-Diethyl-m-toluamide	µg/L	<4	<8	<4	<8	<8	<8
Diethylphthalate	µg/L	<4	<8	<4	<8	<8	<8
Diethylene glycol monoethyl ether	µg/L	<4	<8	<4	<8	<8	<8
N,N-Diethylformamide	µg/L	<12	<24	<12	<24	<24	<24
Diiodomethane (Methyl iodide)	µg/L	<4	<8	<4	<8	<8	<8
Diisopropyl adipate	µg/L	<4	<8	<4	<8	<8	<8
Dimethyl phthalate	µg/L	<4	<8	<4	<8	<8	<8
N,N-Dimethyl acetamide	µg/L	<4	<8	<4	<8	<8	<8
N,N-Dimethylbenzylamine	µg/L	<4	<8	<4	<8	<8	<8
N,N-Dimethylformamide	µg/L	<8	<16	<8	<16	<16	<16
Dipropylene glycol methyl ether	µg/L	<4	<8	<4	<8	<8	<8
Dodecamethylcyclohexasiloxane	µg/L	<4	<8	<4	<8	<8	<8
2-Ethoxyethanol	µg/L	<4	<8	<4	<8	<8	<8
2-Ethyl-1-hexanol	µg/L	<4	<8	<4	<8	<8	<8
2-Ethylhexanoic acid	µg/L	<4	<8	<4	<8	<8	<8

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
bis-2-Ethylhexyl adipate	µg/L	<4	<8	<4	<8	<8	<8
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	<4	<8	<4	<8	<8	<8
4-Ethylmorpholine	µg/L	<4	<8	<4	<8	<8	<8
1-Formylpiperidine	µg/L	<4	<8	<4	<8	<8	<8
Heptanoic acid	µg/L	<4	<8	<4	<8	<8	<8
2-Heptanone	µg/L	<4	<8	<4	<8	<8	<8
gamma-Hexalactone	µg/L	<4	<8	<4	<8	<8	<8
Hexanoic acid	µg/L	<8	<16	<8	<16	<16	<16
2-Hexanol	µg/L	<4	<8	<4	<8	<8	<8
2-Hydroxybenzothiazole	µg/L	<4	<8	<4	<8	<8	<8
Ibuprofen	µg/L	<4	<8	<4	<8	<8	<8
Iodoform	µg/L	<4	<8	<4	<8	<8	<8
Isophorone	µg/L	<4	<8	<4	<8	<8	<8
4-Isopropylphenol	µg/L	<4	<8	<4	<8	<8	<8
Lauramide	µg/L	<4	<8	<4	<8	<8	<8
Lauric acid (Dodecanoic acid)	µg/L	<120	<240	<120	<240	<240	<240
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<4	<8	<4	<8	<8	<8
2-Mercaptobenzothiazole	µg/L	<40	<80	<40	<80	<80	<80
2-Methyl-2,4-pentanediol	µg/L	<4	<8	<4	<8	<8	<8
1-Methyl-2-pyrrolidinone	µg/L	<4	<8	<4	<8	<8	<8
Methyl-4-hydroxybenzoate	µg/L	<4	<8	<4	<8	<8	<8
Methyl sulfone	µg/L	<4	<8	<4	<8	<8	<8
2-Methyl butyric acid	µg/L	<12	<24	<12	<24	<24	<24
2-Methylthiobenzothiazole	µg/L	<4	<8	4	<8	<8	<8
Monomethyl phthalate	µg/L	<4	<8	<4	<8	<8	<8
Myristic acid	µg/L	<24	<48	<24	<48	<48	<48
(+)-Neomenthol	µg/L	<4	<8	<4	<8	<8	<8
Nicotine	µg/L	<4	<8	<4	<8	<8	<8
Nonadecane	µg/L	<4	<8	<4	<8	<8	<8
Nonanoic acid	µg/L	<12	<24	<12	<24	<24	<24
1-Octadecanol	µg/L	<12	<24	<12	<24	<24	<24
Octamethylcyclotetrasiloxane	µg/L	<4	<8	<4	<8	<8	<8
Octanoic acid	µg/L	<8	<16	<8	<16	<16	<16
4-tert-Octylphenol	µg/L	<4	<8	<4	<8	<8	<8
Oleic acid	µg/L	<40	<80	<40	<80	<80	<80
Oxindole	µg/L	<4	<8	<4	<8	<8	<8
Palmitic acid	µg/L	<120	<240	<120	<240	<240	<240
Palmitoleic acid	µg/L	<100	<200	<100	<200	<200	<200
Pentacosane	µg/L	<4	<8	<4	<8	<8	<8
sec-Phenethyl alcohol	µg/L	<4	<8	<4	<8	<8	<8
Phenol	µg/L	<4	<8	<4	<8	<8	<8
2-Phenoxyethanol	µg/L	<4	<8	<4	<8	<8	<8
N-Phenyl-2-naphthylamine	µg/L	<4	<8	<4	<8	<8	<8
2-Phenyl-2-propanol	µg/L	<4	<8	<4	<8	<8	<8
2-Phenylacetic acid	µg/L	<16	<32	<16	<32	<32	<32

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
Phenethyl alcohol	µg/L	<4	<8	<4	<8	<8	<8
2-Phenylphenol	µg/L	<4	<8	<4	<8	<8	<8
Salicyclic Acid	µg/L	<32	<64	<32	<64	<64	<64
trans-Squalene	µg/L	<8	<16	<8	<16	<16	<16
Stearic acid	µg/L	<100	<200	<100	<200	<200	<200
1-Tetradecanol	µg/L	<4	<8	<4	<8	<8	<8
Tetramethylsuccinonitrile	µg/L	<4	<8	<4	<8	<8	<8
Tetramethyl thiourea	µg/L	<4	<8	<4	<8	<8	<8
Tetramethylurea	µg/L	<4	<8	<4	<8	<8	<8
Thymol	µg/L	<4	<8	<4	<8	<8	<8
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<4	<8	<4	<8	<8	<8
Tributylamine	µg/L	<4	<8	<4	<8	<8	<8
Tributyl phosphate	µg/L	<4	<8	<4	<8	<8	<8
Triethyl phosphate	µg/L	<8	<16	<8	<16	<16	<16
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<8	<16	<8	<16	<16	<16
Tripropylene glycol monomethyl ether	µg/L	<4	<8	<4	<8	<8	<8
Undecanoic acid	µg/L	<24	<48	<24	<48	<48	<48
2-Undecanone	µg/L	<4	<8	<4	<8	<8	<8
Valeric acid (Pentanoic acid)	µg/L	<24	<48	<24	<48	<48	<48
Vanillin	µg/L	<8	<16	<8	<16	<16	<16
Alcohols (DAI/GC/MS)							
1-Butanol	µg/L	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	995	<100	574	707	801	<100
Methanol	µg/L	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	<100	<100	<100	<100

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 2. ISS SVO-ZV Potable Water Summary for Expeditions 16 through 20

Mission		ISS 2JA/Exp. 20				ISS 17A/Exp. 20	Soyuz 18/Exp. 20
Sample Location		SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV	SVO-ZV
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		9-Apr-09	4-May-09	7-Jul-09	22-Jul-09	04-Aug-2009	22-Sep-2009
Analysis/Sample ID	Units	20090803008	20090803010	20090803012	20090803014	20090914004	20091021007
Glycols (DAI/GC/MS)							
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500	<500	<500
Carboxylates (CE)							
Acetate	µg/L	<125	<125	<125	<125	<125	<125
Formate	µg/L	59200	<125	64000	63000	54300	<125
Glycolate	µg/L	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125	<125	<125
Aldehydes							
Formaldehyde	µg/L	<2	<2	<2	<2	<2	<2
Amines (CE)							
Ethylamine	µg/L	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)							
Urea	µg/L	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	<4	<8	30	55	55	<8
Organic Carbon Recovery	percent	94.14	0.14	93.38	93.40	97.25	0.00
Unaccounted Organic Carbon	mg/L	1.00	1.70	1.21	1.19	0.42	0.39

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum	Maximum	GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
Physical Characteristics											
pH	pH units	U.S.	5.5-9.0	MORD	7.69	7.53	7.63	7.01	7.01	NA	NA
Conductivity	µS/cm	U.S.			350	377	330	268	314	NA	NA
Turbidity	NTU	U.S.	1.5*	MORD	13.5	9.0	6.5	2.6	0.6	NA	NA
Total Dissolved Solids	mg/L	U.S.	100 (1,000#)	MORD	187	216	179	152	88	NA	NA
Iodine (LCV)											
Total I	mg/L	U.S.	0.05	MORD	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA
Anions (IC/ISE)											
Bromide	mg/L	U.S.			<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
Chloride	mg/L	U.S.	250	MORD	9.15	9.61	11.5	11.4	9.06	NA	NA
Fluoride	mg/L	U.S.	1.5/4	MORD/EPA	<0.1	<0.1	<0.1	0.1	<0.1	NA	NA
Nitrate as Nitrogen (NO3-N)	mg/L	U.S.	10	MORD/EPA	<0.11	0.23	0.22	0.13	<0.11	NA	NA
Nitrite as Nitrogen (NO2-N)	mg/L	U.S.	1	EPA	<0.08	<0.08	<0.08	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	U.S.			<0.24	<0.24	<0.24	<0.24	<0.24	NA	NA
Sulfate	mg/L	U.S.	250	MORD	46.1	40.8	32.8	35.0	27.5	NA	NA
Cations (IC)											
Ammonia as Nitrogen (NH3-N)	mg/L	U.S.	2/1	MORD/SWEG	0.031	<0.002	<0.002	0.025	<0.002	NA	NA
Lithium	mg/L	U.S.			0.017	0.004	<0.002	<0.002	<0.002	NA	NA
Metals (ICP/MS)											
Calcium	mg/L	U.S.	100	MORD	42.1	50.2	41.3	35.4	41.2	35.3	35.9
Magnesium	mg/L	U.S.	50	MORD	10.8	11.9	9.94	7.90	10.2	8.32	8.45
Potassium	mg/L	U.S.			4.58	2.85	3.4	2.40	2.85	2.59	2.03
Sodium	mg/L	U.S.			5.85	6.53	7.69	4.39	7.49	4.39	4.66
Aluminum	µg/L	U.S.			71	63	129	96	99	70	20
Antimony	µg/L	U.S.	6	EPA	<8	<2	<4	<2	<4	<2	<4
Arsenic	µg/L	U.S.	10	MORD/EPA	<4	<1	<2	<2	<2	<1	<4
Barium	µg/L	U.S.	1,000/10,000	MORD/SWEG	23	28	22	17	7	15	37
Beryllium	µg/L	U.S.	4	EPA	<4	<1	<2	<2	<2	<1	<4
Cadmium	µg/L	U.S.	5/22	MORD/SWEG	<4	<1	<2	<2	6	<1	<4
Chromium	µg/L	U.S.	100	MORD/EPA	<20	<1	<10	<10	<10	<5	<20
Cobalt	µg/L	U.S.			<4	<1	<2	<2	<2	<1	<4
Copper	µg/L	U.S.	1,000/1,300	MORD/EPA	<4	4	2	5	12	4	19
Iron	µg/L	U.S.	300	MORD	120	108	51	55	59	81	85
Lead	µg/L	U.S.	50/15	MORD/EPA	<4	<1	<2	<2	<2	<1	<4
Manganese	µg/L	U.S.	50/300	MORD/SWEG	168	101	165	93	28	103	47
Mercury	µg/L	U.S.	2	MORD/EPA	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
Molybdenum	µg/L	U.S.	40	EPA HA	<4	<1	<2	<2	<2	<1	<4
Nickel	µg/L	U.S.	100/300	MORD/SWEG	<4	2	3	4	<2	3	5

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum	Maximum	GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
Selenium	µg/L	U.S.	10/50	MORD/EPA	<4	4	<2	<2	<2	1	<4
Silver	µg/L	U.S.	500/400	MORD/SWEG	523	382	495	435	164	745	356
Silver, Dissolved	µg/L	U.S.			198	201	63	140	115	571	247
Zinc	µg/L	U.S.	5,000/2,000	MORD/SWEG	23	11	19	13	9	54	684
Total Organic Carbon (Sievers)											
Total Inorganic Carbon	mg/L	U.S.			31.2	37.3	28.2	25.6	29.7	27.4	NA
Total Organic Carbon	mg/L	U.S.	20**	MORD	1.05	2.60	1.01	0.83	0.39	1.87	NA
Volatile Organics											
Acetone	µg/L	U.S.	15,000	SWEG	<2	<2	64	5	<2	NA	NA
Acryloniltrile	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Allyl chloride (3-Chloropropene)	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Benzene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Bromobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Bromochloromethane	µg/L	U.S.	90	EPA HA	<4	<4	<4	<4	<4	NA	NA
Bromodichloromethane	µg/L	U.S.	THM 80	EPA	<0.4	2.7	<0.4	<0.4	<0.4	NA	NA
Bromoform	µg/L	U.S.	THM 80	EPA	<2	<2	<2	<2	<2	NA	NA
Bromomethane	µg/L	U.S.	10	EPA HA	<2	<2	<2	<2	<2	NA	NA
2-Butanone (Methyl ethyl ketone)	µg/L	U.S.	4,000	EPA HA	<2	<2	<2	<2	<2	NA	NA
n-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
sec-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
tert-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Carbon disulfide	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Carbon tetrachloride	µg/L	U.S.	5	EPA	4.2	1.7	<0.4	0.6	<0.4	NA	NA
Chloroacetonitrile	µg/L	U.S.			<10	<10	<10	<10	<10	NA	NA
Chlorobenzene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1-Chlorobutane (Butyl chloride)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Chloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Chloroform	µg/L	U.S.	6,500/THM 80	SWEG/EPA	15.8	46.4	15.7	1.1	<0.4	NA	NA
Chloromethane	µg/L	U.S.	30	EPA HA	NA	<2	<2	<2	<2	NA	NA
2-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
4-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Dibromochloromethane	µg/L	U.S.	THM 80	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	U.S.	0.2	EPA	<2	<2	<2	<2	<2	NA	NA
1,2-Dibromoethane (EDB)	µg/L	U.S.	0.05	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Dibromomethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2-Dichlorobenzene	µg/L	U.S.	600	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,3-Dichlorobenzene	µg/L	U.S.	600	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,4-Dichlorobenzene	µg/L	U.S.	75	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
trans-1,4-Dichloro-2-butene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Dichlorodifluoromethane	µg/L	U.S.	1,000	EPA HA	NA	<2	<2	<2	<2	NA	NA
1,1-Dichloroethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2-Dichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum Contaminant Level	Maximum Contaminant Level	GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description					Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Test Conducted			14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
1,1-Dichloroethene	µg/L	U.S.	7	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
cis1,2-Dichloroethene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
trans-1,2-Dichloroethene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2-Dichloropropane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,3-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
2,2-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,1-Dichloropropanone	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
1,1-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
cis-1,3-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
trans-1,3-Dichloropropene	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Diethyl ether	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Ethylbenzene	µg/L	U.S.	700	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Ethyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Hexachlorobutadiene	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	NA	NA
Hexachloroethane	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	NA	NA
2-Hexanone	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Iodomethane	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Isopropylbenzene (Cumene)	µg/L	U.S.	4,000	EPA DWEL	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
4-Isopropyltoluene (Cymene)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Methacrylonitrile	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Methyl acrylate	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Methyl-t-butylether (MTBE)	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Methylene chloride (Dichloromethane)	µg/L	U.S.	15,000/5	SWEG/EPA	<0.4	<0.4	<0.4	2.1	<0.4	NA	NA
Methyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
4-Methyl-2-pentanone	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Naphthalene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Nitrobenzene	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
2-Nitropropane	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Pentachloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Propionitrile (Ethyl cyanide)	µg/L	U.S.			<10	<10	<10	<10	<10	NA	NA
n-Propylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Styrene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,1,1,2-Tetrachloroethane	µg/L	U.S.	70	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,1,2,2-Tetrachloroethane	µg/L	U.S.	0.3	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Tetrachloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	NA	NA	<0.4	NA	NA
Tetrahydrofuran	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Toluene	µg/L	U.S.	1,000	EPA	<0.4	<0.4	2.2	<0.4	<0.4	NA	NA
1,2,3-Trichlorobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2,4-Trichlorobenzene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,1,1-Trichloroethane	µg/L	U.S.	200	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,1,2-Trichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Trichloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Trichlorofluoromethane	µg/L	U.S.	2,000	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum		GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Maximum Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
1,2,3-Trichloropropane	µg/L	U.S.	40	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,2,4-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
1,3,5-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Vinyl Acetate	µg/L	U.S.			<2	<2	<2	<2	<2	NA	NA
Vinyl Chloride	µg/L	U.S.	2	EPA	<2	<2	<2	<2	<2	NA	NA
m&p-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
o-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	NA	NA
Extractable Organics											
Acetophenone	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
Benzaldehyde	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Benzoic acid	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
Benzothiazole	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Benzyl alcohol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Benzyl butyl phthlate	µg/L	U.S.	7,000	EPA DWEL	<4	<8	<4	<8	<8	NA	NA
2-Butoxyethanol	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
2-(2-Butoxyethoxy)ethanol	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
2-(2-Butoxyethoxy)ethyl acetate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
n-Butylpalmitate	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
Butylated hydroxyanisole (BHA)	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
N-Butylbenzenesulfonamide	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
3-tert-Butylphenol	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
Caffeine	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
tris-2-Chloroethyl phosphate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Cholesterol	µg/L	U.S.			<32	<64	<32	<64	<64	NA	NA
o-Cresol (2-Methylphenol)	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Cyclododecane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Decamethylcyclopentasiloxane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Decanoic acid	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2,4-Di-t-butylphenol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
1,4 Diacetylbenzene	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
N,N-Dibutylformamide	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Dibutyl phthalate	µg/L	U.S.	40,000/4,000	SWEG/EPA DWEI	<4	<8	<4	<8	<8	NA	NA
Dibutylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<4	<8	<8	NA	NA
N,N-Diethyl-m-toluamide	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Diethylphthalate	µg/L	U.S.	30,000	EPA DWEL	<4	<8	<4	<8	<8	NA	NA
Diethylene glycol monoethyl ether	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
N,N-Diethylformamide	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
Diiodomethane (Methyl iodide)	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Diisopropyl adipate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Dimethyl phthalate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
N,N-Dimethyl acetamide	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum		GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Maximum Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
N,N-Dimethylbenzylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<4	<8	<8	NA	NA
N,N-Dimethylformamide	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
Dipropylene glycol methyl ether	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Dodecamethylcyclohexasiloxane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Ethoxyethanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Ethyl-1-hexanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Ethylhexanoic acid	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
bis-2-Ethylhexyl adipate	µg/L	U.S.	400	EPA	<4	<8	<4	<8	<8	NA	NA
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	U.S.	20,000/6	SWEG/EPA	<4	<8	<4	<8	10	NA	NA
4-Ethylmorpholine	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
1-Formylpiperidine	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Heptanoic acid	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Heptanone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
gamma-Hexalactone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Hexanoic acid	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
2-Hexanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Hydroxybenzothiazole	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Ibuprofen	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Iodoform	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Isophorone	µg/L	U.S.	100	EPA HA	<4	<8	<4	<8	<8	NA	NA
4-Isopropylphenol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Lauramide	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Lauric acid (Dodecanoic acid)	µg/L	U.S.			<120	<240	<120	<240	<240	NA	NA
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Mercaptobenzothiazole	µg/L	U.S.	30,000	SWEG	<40	<80	<40	<80	<80	NA	NA
2-Methyl-2,4-pentanediol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
1-Methyl-2-pyrrolidinone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Methyl-4-hydroxybenzoate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Methyl sulfone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Methyl butyric acid	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
2-Methylthiobenzothiazole	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Monomethyl phthalate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Myristic acid	µg/L	U.S.			<24	<48	<24	<48	<48	NA	NA
(+)-Neomenthol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Nicotine	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Nonadecane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Nonanoic acid	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
1-Octadecanol	µg/L	U.S.			<12	<24	<12	<24	<24	NA	NA
Octamethylcyclotetrasiloxane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Octanoic acid	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
4-tert-Octylphenol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Oleic acid	µg/L	U.S.			<40	<80	<40	<80	<80	NA	NA
Oxindole	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum		GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Maximum Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
Palmitic acid	µg/L	U.S.			<120	<240	<120	<240	<240	NA	NA
Palmitoleic acid	µg/L	U.S.			<100	<200	<100	<200	<200	NA	NA
Pentacosane	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
sec-Phenethyl alcohol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Phenol	µg/L	U.S.	1,000/4,000	MORD/SWEG	<4	<8	<4	<8	<8	NA	NA
2-Phenoxyethanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
N-Phenyl-2-naphthylamine	µg/L	U.S.	260,000	SWEG	<4	<8	<4	<8	<8	NA	NA
2-Phenyl-2-propanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Phenylacetic acid	µg/L	U.S.			<16	<32	<16	<32	<32	NA	NA
Phenethyl alcohol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
2-Phenylphenol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Salicyclic Acid	µg/L	U.S.			<32	<64	<32	<64	<64	NA	NA
trans-Squalene	µg/L	U.S.			<8	<8	<8	<16	<8	NA	NA
Stearic acid	µg/L	U.S.			<100	<200	<100	<200	<200	NA	NA
1-Tetradecanol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Tetramethylsuccinonitrile	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Tetramethyl thiourea	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Tetramethylurea	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Thymol	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Tributylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<4	<8	<4	<8	<8	NA	NA
Tributyl phosphate	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Triethyl phosphate	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
Tripropylene glycol monomethyl ether	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Undecanoic acid	µg/L	U.S.			<24	<48	<24	<48	<48	NA	NA
2-Undecanone	µg/L	U.S.			<4	<8	<4	<8	<8	NA	NA
Valeric acid (Pentanoic acid)	µg/L	U.S.			<24	<48	<24	<48	<48	NA	NA
Vanillin	µg/L	U.S.			<8	<16	<8	<16	<16	NA	NA
Alcohols (DAI/GC/MS)											
1-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
Ethanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
Methanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Methyl-1-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Methyl-2-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
3-Methyl-1-butanol (Isopentanol)	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Methyl-1-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Methyl-2-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
1-Pentanol (Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Pentanol (sec-Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
3-Pentanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission					Progress 28	Progress 29	Progress 30	Progress 31	Progress 34	ISS 1E/Exp. 16	Soyuz 15/Exp. 17
Sample Location			Potable Water Maximum		GSE prior to filling tanks (28P Rodnik)	GSE prior to filling tanks (29P Rodnik)	GSE prior to filling tanks (30P Rodnik)	GSE prior to filling tanks (31P Rodnik)	GSE prior to filling tanks (34 P Rodnik)	Rodnik Tank -in-flight (RSA Drink Bag)	Rodnik Tank - inflight (RSA Drink Bag)
Sample Description		Test	Contaminant	Maximum Contaminant	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Ground-Supplied Water	Potable Water	Potable Water (#7)
Sample Date		Conducted	Level	Level	14-Dec-2007	26-Mar-2008	10-Jul-2008	09-Oct-2008	21-May-2009	13-Feb-2008	16-Apr-2008
Analysis/Sample ID	Units	by	(MCL)	Source	20080129002	20080428001	20080903001	20081208018	20090902001	20080221002	20080502006
1-Propanol	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
2-Propanol (Isopropanol)	µg/L	U.S.			<100	<100	<100	<100	<100	NA	NA
Glycols (DAI/GC/MS)											
1,2-Ethanediol (Ethylene glycol)	µg/L	U.S.	12000/14000	MORD/EPA HA	<1000	<1000	<1000	<1000	<1000	NA	NA
1,2-Propanediol (Propylene glycol)	µg/L	U.S.			<500	<500	<500	<500	<500	NA	NA
Carboxylates (CE)											
Acetate	µg/L	U.S.			<125	<125	<125	<125	<125	NA	NA
Formate	µg/L	U.S.	2,500,000	SWEG	<125	<125	<125	<125	<125	NA	NA
Glycolate	µg/L	U.S.			<125	<125	<125	<125	<125	NA	NA
Glyoxylate	µg/L	U.S.			<125	<125	<125	<125	<125	NA	NA
Lactate	µg/L	U.S.			<1000	<1000	<1000	<1000	<1000	NA	NA
Oxalate	µg/L	U.S.			<125	<125	<125	<125	<125	NA	NA
Propionate	µg/L	U.S.			<125	<125	<125	<125	<125	NA	NA
Aldehydes											
Formaldehyde	µg/L	U.S.	12,000/1,000	SWEG/EPA HA	<2	<2	<2	<2	<2	NA	NA
Amines (CE)											
Ethylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	NA	NA
Methylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	NA	NA
n-Propylamine	µg/L	U.S.	Monoalkylamines 2000	SWEG	<125	<125	<125	<125	<125	NA	NA
Trimethylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<125	<125	<125	<125	<125	NA	NA
Non-volatiles (LC/UV-VIS)											
Urea	µg/L	U.S.			<800	<800	<800	<800	<800	NA	NA
Caprolactam	µg/L	U.S.	100,000	SWEG	<4	<8	<4	<8	<8	NA	NA
Organic Carbon Recovery	percent	U.S.			0.18	0.19	4.29	0.43	1.90	NA	NA
Unaccounted Organic Carbon	mg/L	U.S.			1.05	2.60	0.97	0.82	0.38	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
Physical Characteristics						
pH	pH units	NA	350	7.67	NA	NA
Conductivity	µS/cm	NA	8.11	338	NA	NA
Turbidity	NTU	NA	NA	<0.1	NA	NA
Total Dissolved Solids	mg/L	NA	NA	191	NA	NA
Iodine (LCV)						
Total I	mg/L	NA	NA	<0.05	NA	NA
Anions (IC/ISE)						
Bromide	mg/L	NA	<0.5	<0.5	NA	NA
Chloride	mg/L	NA	0.99	0.92	NA	NA
Fluoride	mg/L	NA	0.9	1.01	NA	NA
Nitrate as Nitrogen (NO3-N)	mg/L	NA	4.12	4.48	NA	NA
Nitrite as Nitrogen (NO2-N)	mg/L	NA	<0.08	<0.08	NA	NA
Phosphate as P (PO4-P)	mg/L	NA	<0.04	<0.24	NA	NA
Sulfate	mg/L	NA	26.0	25.1	NA	NA
Cations (IC)						
Ammonia as Nitrogen (NH3-N)	mg/L	NA	<0.002	<0.002	NA	NA
Lithium	mg/L	NA	<0.002	<0.002	NA	NA
Metals (ICP/MS)						
Calcium	mg/L	43.6	44.0	46.5	43.6	NA
Magnesium	mg/L	12.1	11.9	12.1	11.1	NA
Potassium	mg/L	1.40	1.30	1.33	1.50	NA
Sodium	mg/L	6.64	6.60	6.28	6.35	NA
Aluminum	µg/L	107	<8	14	15	18
Antimony	µg/L	<8	<4	<8	<2	<4
Arsenic	µg/L	<4	<4	<4	<2	<2
Barium	µg/L	14	7	7	10	7
Beryllium	µg/L	<4	<4	<4	<2	<2
Cadmium	µg/L	6	<4	<4	<2	<2
Chromium	µg/L	<20	<20	<20	<10	<10
Cobalt	µg/L	<4	<4	<4	<2	<2
Copper	µg/L	11	7	<4	3	8
Iron	µg/L	112	78	93	36	30
Lead	µg/L	<4	<4	<4	<2	<2
Manganese	µg/L	10	<4	<4	17	8
Mercury	µg/L	<0.5	<0.5	<0.5	<1	<1
Molybdenum	µg/L	<4	<4	<4	<2	<2
Nickel	µg/L	23	21	68	78	127

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
Selenium	µg/L	<4	<4	5	<2	<2
Silver	µg/L	126	231	260	36	141
Silver, Dissolved	µg/L	8	197	243	<4	77
Zinc	µg/L	2580	500	43	215	585
Total Organic Carbon (Sievers)						
Total Inorganic Carbon	mg/L	35.7	37.5	36.6	30.8	35.0
Total Organic Carbon	mg/L	9.42	2.70	0.54	1.73	2.32
Volatile Organics						
Acetone	µg/L	NA	10	15	10	<8
Acryloniltrile	µg/L	NA	<2	<2	<2	<8
Allyl chloride (3-Chloropropene)	µg/L	NA	<2	<2	<2	<8
Benzene	µg/L	NA	0.8	1	<0.4	<1.6
Bromobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Bromochloromethane	µg/L	NA	<4	<4	<4	<16
Bromodichloromethane	µg/L	NA	1.5	1.7	<0.4	<1.6
Bromoform	µg/L	NA	<2	3	<2	<8
Bromomethane	µg/L	NA	<2	<2	<2	<8
2-Butanone (Methyl ethyl ketone)	µg/L	NA	111	194	4	<8
n-Butylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
sec-Butylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
tert-Butylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Carbon disulfide	µg/L	NA	<2	<2	<2	<8
Carbon tetrachloride	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Chloroacetonitrile	µg/L	NA	<10	<10	<10	<40
Chlorobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1-Chlorobutane (Butyl chloride)	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Chloroethane	µg/L	NA	<2	<2	<2	<8
Chloroform	µg/L	NA	1.2	1.4	<0.4	<1.6
Chloromethane	µg/L	NA	<2	<2	<2	<8
2-Chlorotoluene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
4-Chlorotoluene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Dibromochloromethane	µg/L	NA	1.8	2.5	<0.4	<1.6
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	NA	<2	<2	<2	<8
1,2-Dibromoethane (EDB)	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Dibromomethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,2-Dichlorobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,3-Dichlorobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,4-Dichlorobenzene	µg/L	NA	NA	<0.4	<0.4	<1.6
trans-1,4-Dichloro-2-butene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Dichlorodifluoromethane	µg/L	NA	<2	<2	<2	<8
1,1-Dichloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,2-Dichloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
1,1-Dichloroethene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
cis1,2-Dichloroethene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
trans-1,2-Dichloroethene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,2-Dichloropropane	µg/L	NA	<0.4	1.1	<0.4	<1.6
1,3-Dichloropropane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
2,2-Dichloropropane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,1-Dichloropropanone	µg/L	NA	<2	<2	<2	<8
1,1-Dichloropropene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
cis-1,3-Dichloropropene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
trans-1,3-Dichloropropene	µg/L	NA	NA	<2	<2	<8
Diethyl ether	µg/L	NA	<2	<2	<2	<8
Ethylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Ethyl methacrylate	µg/L	NA	<2	<2	<2	<8
Hexachlorobutadiene	µg/L	NA	<2	<2	<2	<8
Hexachloroethane	µg/L	NA	<2	<2	<2	<8
2-Hexanone	µg/L	NA	<2	<2	<2	<8
Iodomethane	µg/L	NA	<2	<2	6	<8
Isopropylbenzene (Cumene)	µg/L	NA	<0.4	<0.4	<0.4	<1.6
4-Isopropyltoluene (Cymene)	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Methacrylonitrile	µg/L	NA	<2	<2	<2	<8
Methyl acrylate	µg/L	NA	<2	<2	<2	<8
Methyl-t-butylether (MTBE)	µg/L	NA	<2	<2	<2	<8
Methylene chloride (Dichloromethane)	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Methyl methacrylate	µg/L	NA	<2	<2	<2	<8
4-Methyl-2-pentanone	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Naphthalene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Nitrobenzene	µg/L	NA	<2	<2	<2	<8
2-Nitropropane	µg/L	NA	<2	<2	<2	<8
Pentachloroethane	µg/L	NA	<2	<2	<2	<8
Propionitrile (Ethyl cyanide)	µg/L	NA	<10	<10	<10	<40
n-Propylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Styrene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,1,1,2-Tetrachloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,1,2,2-Tetrachloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Tetrachloroethene	µg/L	NA	<0.4	<0.4	NA	<1.6
Tetrahydrofuran	µg/L	NA	<2	<2	<2	<8
Toluene	µg/L	NA	1.7	1.7	<0.4	<1.6
1,2,3-Trichlorobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,2,4-Trichlorobenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,1,1-Trichloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,1,2-Trichloroethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Trichloroethene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Trichlorofluoromethane	µg/L	NA	<0.4	<0.4	<0.4	<1.6

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
1,2,3-Trichloropropane	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,2,4-Trimethylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
1,3,5-Trimethylbenzene	µg/L	NA	<0.4	<0.4	<0.4	<1.6
Vinyl Acetate	µg/L	NA	<2	<2	<2	<8
Vinyl Chloride	µg/L	NA	<2	<2	<2	<8
m&p-Xylene	µg/L	NA	<0.4	3.7	<0.4	<1.6
o-Xylene	µg/L	NA	1.8	1.8	<0.4	<1.6
Extractable Organics						
Acetophenone	µg/L	NA	<40	<8	NA	NA
Benzaldehyde	µg/L	NA	<20	<4	NA	NA
Benzoic acid	µg/L	NA	<60	<12	NA	NA
Benzothiazole	µg/L	NA	<20	<4	NA	NA
Benzyl alcohol	µg/L	NA	<20	<4	NA	NA
Benzyl butyl phthlate	µg/L	NA	<20	<4	NA	NA
2-Butoxyethanol	µg/L	NA	<40	<8	NA	NA
2-(2-Butoxyethoxy)ethanol	µg/L	NA	<40	<8	NA	NA
2-(2-Butoxyethoxy)ethyl acetate	µg/L	NA	<20	<4	NA	NA
n-Butylpalmitate	µg/L	NA	<40	<8	NA	NA
Butylated hydroxyanisole (BHA)	µg/L	NA	<20	<4	NA	NA
N-Butylbenzenesulfonamide	µg/L	NA	<20	<4	NA	NA
3-tert-Butylphenol	µg/L	NA	<60	<12	NA	NA
Caffeine	µg/L	NA	<20	<4	NA	NA
tris-2-Chloroethyl phosphate	µg/L	NA	<20	<4	NA	NA
Cholesterol	µg/L	NA	<160	<32	NA	NA
o-Cresol (2-Methylphenol)	µg/L	NA	<20	<4	NA	NA
Cyclododecane	µg/L	NA	<20	<4	NA	NA
Decamethylcyclopentasiloxane	µg/L	NA	<20	<4	NA	NA
Decanoic acid	µg/L	NA	<40	<8	NA	NA
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	NA	<20	<4	NA	NA
2,4-Di-t-butylphenol	µg/L	NA	<20	<4	NA	NA
1,4 Diacetylbenzene	µg/L	NA	<20	<4	NA	NA
N,N-Dibutylformamide	µg/L	NA	<20	<4	NA	NA
Dibutyl phthalate	µg/L	NA	<20	6	NA	NA
Dibutylamine	µg/L	NA	<20	<4	NA	NA
N,N-Diethyl-m-toluamide	µg/L	NA	<20	<4	NA	NA
Diethylphthalate	µg/L	NA	<20	<4	NA	NA
Diethylene glycol monoethyl ether	µg/L	NA	<20	<4	NA	NA
N,N-Diethylformamide	µg/L	NA	<60	<12	NA	NA
Diiodomethane (Methyl iodide)	µg/L	NA	<20	<4	NA	NA
Diisopropyl adipate	µg/L	NA	<20	<4	NA	NA
Dimethyl phthalate	µg/L	NA	<20	<4	NA	NA
N,N-Dimethyl acetamide	µg/L	NA	<20	<4	NA	NA

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*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
N,N-Dimethylbenzylamine	µg/L	NA	<20	<4	NA	NA
N,N-Dimethylformamide	µg/L	NA	<40	<8	NA	NA
Dipropylene glycol methyl ether	µg/L	NA	<20	<4	NA	NA
Dodecamethylcyclohexasiloxane	µg/L	NA	<20	<4	NA	NA
2-Ethoxyethanol	µg/L	NA	<20	<4	NA	NA
2-Ethyl-1-hexanol	µg/L	NA	<20	<4	NA	NA
2-Ethylhexanoic acid	µg/L	NA	<20	<4	NA	NA
bis-2-Ethylhexyl adipate	µg/L	NA	<20	<4	NA	NA
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	NA	<20	<4	NA	NA
4-Ethylmorpholine	µg/L	NA	<20	<4	NA	NA
1-Formylpiperidine	µg/L	NA	<20	<4	NA	NA
Heptanoic acid	µg/L	NA	<20	<4	NA	NA
2-Heptanone	µg/L	NA	<20	<4	NA	NA
gamma-Hexalactone	µg/L	NA	<20	<4	NA	NA
Hexanoic acid	µg/L	NA	<40	<8	NA	NA
2-Hexanol	µg/L	NA	<20	<4	NA	NA
2-Hydroxybenzothiazole	µg/L	NA	<20	<4	NA	NA
Ibuprofen	µg/L	NA	<20	<4	NA	NA
Iodoform	µg/L	NA	<20	<4	NA	NA
Isophorone	µg/L	NA	<20	<4	NA	NA
4-Isopropylphenol	µg/L	NA	<20	<4	NA	NA
Lauramide	µg/L	NA	<20	<4	NA	NA
Lauric acid (Dodecanoic acid)	µg/L	NA	<600	<120	NA	NA
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	NA	<20	<4	NA	NA
2-Mercaptobenzothiazole	µg/L	NA	<200	<40	NA	NA
2-Methyl-2,4-pentanediol	µg/L	NA	<20	<4	NA	NA
1-Methyl-2-pyrrolidinone	µg/L	NA	<20	<4	NA	NA
Methyl-4-hydroxybenzoate	µg/L	NA	<20	<4	NA	NA
Methyl sulfone	µg/L	NA	<20	<4	NA	NA
2-Methyl butyric acid	µg/L	NA	<60	<12	NA	NA
2-Methylthiobenzothiazole	µg/L	NA	<20	<4	NA	NA
Monomethyl phthalate	µg/L	NA	<20	<4	NA	NA
Myristic acid	µg/L	NA	<120	<24	NA	NA
(+)-Neomenthol	µg/L	NA	<20	<4	NA	NA
Nicotine	µg/L	NA	<20	<4	NA	NA
Nonadecane	µg/L	NA	<20	<4	NA	NA
Nonanoic acid	µg/L	NA	<60	<12	NA	NA
1-Octadecanol	µg/L	NA	<60	<12	NA	NA
Octamethylcyclotetrasiloxane	µg/L	NA	<20	<4	NA	NA
Octanoic acid	µg/L	NA	<40	<8	NA	NA
4-tert-Octylphenol	µg/L	NA	<20	<4	NA	NA
Oleic acid	µg/L	NA	<200	<40	NA	NA
Oxindole	µg/L	NA	<20	<4	NA	NA

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*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
Palmitic acid	µg/L	NA	<600	<120	NA	NA
Palmitoleic acid	µg/L	NA	<500	<100	NA	NA
Pentacosane	µg/L	NA	<20	<4	NA	NA
sec-Phenethyl alcohol	µg/L	NA	<20	<4	NA	NA
Phenol	µg/L	NA	<20	<4	NA	NA
2-Phenoxyethanol	µg/L	NA	<20	<4	NA	NA
N-Phenyl-2-naphthylamine	µg/L	NA	<20	<4	NA	NA
2-Phenyl-2-propanol	µg/L	NA	<20	<4	NA	NA
2-Phenylacetic acid	µg/L	NA	<80	<16	NA	NA
Phenethyl alcohol	µg/L	NA	<20	<4	NA	NA
2-Phenylphenol	µg/L	NA	<20	<4	NA	NA
Salicyclic Acid	µg/L	NA	<160	<32	NA	NA
trans-Squalene	µg/L	NA	<40	<8	NA	NA
Stearic acid	µg/L	NA	<500	<100	NA	NA
1-Tetradecanol	µg/L	NA	<20	<4	NA	NA
Tetramethylsuccinonitrile	µg/L	NA	<20	<4	NA	NA
Tetramethyl thiourea	µg/L	NA	<20	<4	NA	NA
Tetramethylurea	µg/L	NA	<20	<4	NA	NA
Thymol	µg/L	NA	<20	<4	NA	NA
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	NA	<20	<4	NA	NA
Tributylamine	µg/L	NA	<20	<4	NA	NA
Tributyl phosphate	µg/L	NA	<20	<4	NA	NA
Triethyl phosphate	µg/L	NA	<40	<8	NA	NA
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	NA	<40	<8	NA	NA
Tripropylene glycol monomethyl ether	µg/L	NA	<20	<4	NA	NA
Undecanoic acid	µg/L	NA	<120	<24	NA	NA
2-Undecanone	µg/L	NA	<20	<4	NA	NA
Valeric acid (Pentanoic acid)	µg/L	NA	<120	<24	NA	NA
Vanillin	µg/L	NA	<40	<8	NA	NA
Alcohols (DAI/GC/MS)						
1-Butanol	µg/L	NA	<100	<100	NA	NA
2-Butanol	µg/L	NA	<100	<100	NA	NA
Ethanol	µg/L	NA	<100	<100	NA	NA
Methanol	µg/L	NA	<100	<100	NA	NA
2-Methyl-1-butanol	µg/L	NA	<100	<100	NA	NA
2-Methyl-2-butanol	µg/L	NA	<100	<100	NA	NA
3-Methyl-1-butanol (Isopentanol)	µg/L	NA	<100	<100	NA	NA
2-Methyl-1-propanol	µg/L	NA	<100	<100	NA	NA
2-Methyl-2-propanol	µg/L	NA	<100	<100	NA	NA
1-Pentanol (Amyl alcohol)	µg/L	NA	<100	<100	NA	NA
2-Pentanol (sec-Amyl alcohol)	µg/L	NA	<100	<100	NA	NA
3-Pentanol	µg/L	NA	<100	<100	NA	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 3. ISS Ground-Supplied Water Summary for Expeditions 16 through 20

Mission		Soyuz 15/Exp. 17		1J/Exp. 17	Soyuz 16/Exp. 17	Soyuz 17/Exp. 18
Sample Location		ATV-1 Flush (RSA Drink Bag)	ATV-1 (RSA Drink Bag)	ATV-1	ATV-1 from EDV (RSA Drink Bag)	ATV-1 from EDV (Russian Drink Bag)
Sample Description		Water (#8)	Potable Water (#5)	Potable Water	Potable Water	Potable Water
Sample Date		13-Apr-2008	13-Apr-2008	13-Apr-2008	21-Oct-08	05-Apr-2009
Analysis/Sample ID	Units	20080502001	20080502002	20080616011	20081208015	20090615001
1-Propanol	µg/L	NA	<100	<100	NA	NA
2-Propanol (Isopropanol)	µg/L	NA	<100	<100	NA	NA
Glycols (DAI/GC/MS)						
1,2-Ethanediol (Ethylene glycol)	µg/L	NA	<1000	<1000	NA	NA
1,2-Propanediol (Propylene glycol)	µg/L	NA	<500	<500	NA	NA
Carboxylates (CE)						
Acetate	µg/L	NA	<125	<125	NA	NA
Formate	µg/L	NA	<125	<125	NA	NA
Glycolate	µg/L	NA	<125	<125	NA	NA
Glyoxylate	µg/L	NA	<125	<125	NA	NA
Lactate	µg/L	NA	<1000	<1000	NA	NA
Oxalate	µg/L	NA	<125	<125	NA	NA
Propionate	µg/L	NA	<125	<125	NA	NA
Aldehydes						
Formaldehyde	µg/L	NA	<2	<2	NA	NA
Amines (CE)						
Ethylamine	µg/L	NA	<125	<125	NA	NA
Methylamine	µg/L	NA	<125	<125	NA	NA
n-Propylamine	µg/L	NA	<125	<125	NA	NA
Trimethylamine	µg/L	NA	<125	<125	NA	NA
Non-volatiles (LC/UV-VIS)						
Urea	µg/L	NA	<800	<800	NA	NA
Caprolactam	µg/L	NA	<300	<4	NA	NA
Organic Carbon Recovery	percent	NA	3.13	28.08	0.54	NA
Unaccounted Organic Carbon	mg/L	NA	2.62	0.39	1.72	NA

NA=Not analyzed; MI=Matrix interference
*MORD limit 1.5 mg/L (Russian method)
**limit does not include contribution from formate
#TDS allowable limit after mineralization
SWEG - 1000 days (5-2006)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum		WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
Physical Characteristics													
pH	pH units	U.S.	4.5-8.5	41000	7.50	7.28	7.03	6.87	6.76	6.53	7.66	7.35	NA
Conductivity	µS/cm	U.S.			2	2	2	1	2	2	2	2	NA
Turbidity	NTU	U.S.	1	41000	0.3	0.5	1.6	<0.1	0.1	0.1	<0.1	3.1	NA
Color	Pt-Co unit				NA	8	34	<3	4	4	<3	87	NA
Taste	TTN				NA	NA*	NA*	NA	NA	NA	NA	NA	NA
Odor	TON				NA	NA*	NA*	NA	NA	NA	NA	NA	NA
Total Solids	mg/L	U.S.	100	41000	<5	<5	<5	<5	<5	<5	<5	<5	NA
					*A qualitative taste screen was perfomed. A complete taste/odor evaluation was not possible due to sample limitations.								
Iodine (LCV)													
Total I	mg/L	U.S.	6/0.2	41000 (tl I max/tl I at pt of consumption)	<0.05	<0.05	<0.05	<0.05	0.53	0.80	0.61	<0.05	10.9
Iodine	mg/L	U.S.			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	8.16
Iodide	mg/L	U.S.			<0.05	<0.05	<0.05	<0.05	0.48	0.75	0.56	<0.05	2.74
Anions (IC/ISE)													
Bromide	mg/L	U.S.			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Chloride	mg/L	U.S.			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	NA
Fluoride	mg/L	U.S.			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
Nitrate as Nitrogen (NO3-N)	mg/L	U.S.	10	41000	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	NA
Nitrite as Nitrogen (NO2-N)	mg/L	U.S.			NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	U.S.			<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	NA
Sulfate	mg/L	U.S.	250	41000	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	NA
Cations (IC)													
Ammonia as Nitrogen (NH3-N)	mg/L	U.S.	1	SWEG&41000	0.020	0.010	0.022	<0.002	<0.002	<0.002	<0.002	0.034	NA
Lithium	mg/L	U.S.			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	NA
Metals (ICP/MS)													
Calcium	mg/L	U.S.	30	41000	0.02	<0.01	0.02	0.01	0.02	<0.01	0.01	0.02	0.02
Magnesium	mg/L	U.S.	50	41000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Potassium	mg/L	U.S.	340	41000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	mg/L	U.S.			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aluminum	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	<2
Antimony	µg/L	U.S.	2,000	SWEG	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	µg/L	U.S.	10	41000	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L	U.S.	10,000	SWEG&41000	6	6	7	15	20	18	23	14	9
Beryllium	µg/L	U.S.			<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	µg/L	U.S.	22	SWEG&41000	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	µg/L	U.S.	230	41000	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	µg/L	U.S.			<1	<1	<1	<1	<1	<1	<1	<1	<1

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum	Maximum	WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
Copper	µg/L	U.S.	1,000	41000	<1	2	1	<1	3	<1	2	1	<1
Iron	µg/L	U.S.	300	41000	12	18	56	<5	<5	<5	<5	261	<5
Lead	µg/L	U.S.	50	41000	2	4	4	<1	<1	<1	<1	2	<1
Manganese	µg/L	U.S.	300	SWEG&41000	4	5	6	<1	2	2	<1	10	2
Mercury	µg/L	U.S.	2	41000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	U.S.			<1	1	<1	<1	<1	<1	<1	3	<1
Nickel	µg/L	U.S.	300	SWEG&41000	19	38	44	14	180	220	35	32	22
Selenium	µg/L	U.S.	10	41000	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	µg/L	U.S.	400	SWEG&41000	<2	<2	<2	<2	<1	<2	<2	<2	<2
Zinc	µg/L	U.S.	2,000	SWEG&41000	<1	<1	<1	1	2	4	<1	1	2
Total Organic Carbon (Sievers)													
Total Inorganic Carbon	mg/L	U.S.			1.09	1.04	1.11	1.12	1.20	1.13	1.19	1.02	0.98
Total Organic Carbon	mg/L	U.S.	3	41000	0.84	1.06	1.20	0.45	0.29	0.32	0.31	0.79	0.72
Total Polysaccharides													
Total Polysaccharides (as Sucrose)	mg/L				NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics													
Acetone	µg/L	U.S.	15,000	SWEG	65	120	234	123	<2	<2	25	273	NA
Acryloniltrile	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Allyl chloride (3-Chloropropene)	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Benzene	µg/L	U.S.	70/5	SWEG/EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Bromobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Bromochloromethane	µg/L	U.S.	90	EPA HA	<4	<4	<4	<4	<4	<4	<4	<4	NA
Bromodichloromethane	µg/L	U.S.	THM 80	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Bromoform	µg/L	U.S.	THM 80	EPA	<2	<2	<2	<2	<2	<2	<2	<2	NA
Bromomethane	µg/L	U.S.	10	EPA HA	<2	<2	<2	<2	<2	<2	<2	<2	NA
2-Butanone (Methyl ethyl ketone)	µg/L	U.S.	54000/4000	SWEG/EPA	<2	<2	<2	<2	<2	<2	<2	<2	NA
n-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
sec-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
tert-Butylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Carbon disulfide	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Carbon tetrachloride	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Chloroacetonitrile	µg/L	U.S.			<10	<10	<10	<10	<10	<10	<10	<10	NA
Chlorobenzene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1-Chlorobutane (Butyl chloride)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Chloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Chloroform	µg/L	U.S.	6,500/THM 80	SWEG/EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Chloromethane	µg/L	U.S.	30	EPA HA	<2	<2	<2	<2	<2	<2	<2	<2	NA
2-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
4-Chlorotoluene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dibromochloromethane	µg/L	U.S.	THM 80	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	U.S.	0.2	EPA	<2	<2	<2	<2	<2	<2	<2	<2	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum		WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Level Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
1,2-Dibromoethane (EDB)	µg/L	U.S.	0.05	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dibromomethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dichlorobenzene	µg/L	U.S.	600	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3-Dichlorobenzene	µg/L	U.S.	600	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,4-Dichlorobenzene	µg/L	U.S.	75	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
trans-1,4-Dichloro-2-butene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Dichlorodifluoromethane	µg/L	U.S.	1,000	EPA HA	<2	<2	<2	<2	<2	<2	<2	<2	NA
1,1-Dichloroethane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1-Dichloroethene	µg/L	U.S.	7	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
cis1,2-Dichloroethene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
trans-1,2-Dichloroethene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2-Dichloropropane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
2,2-Dichloropropane	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1-Dichloropropanone	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
1,1-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
cis-1,3-Dichloropropene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
trans-1,3-Dichloropropene	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Diethyl ether	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Ethylbenzene	µg/L	U.S.	700	EPA	0.4	<0.4	0.4	0.4	<0.4	<0.4	<0.4	<0.4	NA
Ethyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Hexachlorobutadiene	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	<2	<2	<2	NA
Hexachloroethane	µg/L	U.S.	1	EPA HA	<2	<2	<2	<2	<2	<2	<2	<2	NA
2-Hexanone	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Iodomethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Isopropylbenzene (Cumene)	µg/L	U.S.	4,000	EPA DWEL	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
4-Isopropyltoluene (Cymene)	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Methacrylonitrile	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Methyl acrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Methyl-t-butylether (MTBE)	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Methylene chloride (Dichloromethane)	µg/L	U.S.	15,000/5	SWEG/EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Methyl methacrylate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
4-Methyl-2-pentanone	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Naphthalene	µg/L	U.S.	100	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Nitrobenzene	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
2-Nitropropane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Pentachloroethane	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Propionitrile (Ethyl cyanide)	µg/L	U.S.			<10	<10	<10	<10	<10	<10	<10	<10	NA
n-Propylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Styrene	µg/L	U.S.	100	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,1,2-Tetrachloroethane	µg/L	U.S.	70	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,2,2-Tetrachloroethane	µg/L	U.S.	0.3	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Tetrachloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum		WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
Tetrahydrofuran	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Toluene	µg/L	U.S.	1,000	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,3-Trichlorobenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,4-Trichlorobenzene	µg/L	U.S.	70	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,1-Trichloroethane	µg/L	U.S.	200	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,1,2-Trichloroethane	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Trichloroethene	µg/L	U.S.	5	EPA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Trichlorofluoromethane	µg/L	U.S.	2,000	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,3-Trichloropropane	µg/L	U.S.	40	EPA HA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,2,4-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
1,3,5-Trimethylbenzene	µg/L	U.S.			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	NA
Vinyl Acetate	µg/L	U.S.			<2	<2	<2	<2	<2	<2	<2	<2	NA
Vinyl Chloride	µg/L	U.S.	2	EPA	<2	<2	<2	<2	<2	<2	<2	<2	NA
m&p-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	1.1	0.9	1.0	1.2	<0.4	<0.4	0.8	0.7	NA
o-Xylene	µg/L	U.S.	Total Xylenes 10,000	EPA	0.8	0.6	0.7	0.7	<0.4	<0.4	0.4	<0.4	NA
Extractable Organics													
Acetophenone	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Benzaldehyde	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Benzoic acid	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA
Benzothiazole	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Benzyl alcohol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Benzyl butyl phthlate	µg/L	U.S.	7,000	EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Butoxyethanol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-(2-Butoxyethoxy)ethanol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-(2-Butoxyethoxy)ethyl acetate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
n-Butylpalmitate	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Butylated hydroxyanisole (BHA)	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N-Butylbenzenesulfonamide	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
3-tert-Butylphenol	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA
Caffeine	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
tris-2-Chloroethyl phosphate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Cholesterol	µg/L	U.S.			<32	<64	<32	<32	<32	<32	<32	<64	NA
o-Cresol (2-Methylphenol)	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Cyclododecane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Decamethylcyclopentasiloxane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Decanoic acid	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2,4-Di-t-butylphenol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
1,4 Diacetylbenzene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Dibutylformamide	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Dibutyl phthalate	µg/L	U.S.	40,000/4,000	SWEG/EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
Dibutylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Diethyl-m-toluamide	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location					WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Potable Water Maximum Contaminant Level	Maximum Contaminant Level	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted			12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
Diethylphthalate	µg/L	U.S.	30,000	EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
Diethylene glycol monoethyl ether	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Diethylformamide	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA
Diiodomethane (Methyl iodide)	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Diisopropyl adipate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Dimethyl phthalate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Dimethyl acetamide	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Dimethylbenzylamine	µg/L	U.S.	Dialkylamines 300	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
N,N-Dimethylformamide	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Dipropylene glycol methyl ether	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Dodecamethylcyclohexasiloxane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Ethoxyethanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Ethyl-1-hexanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Ethylhexanoic acid	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
bis-2-Ethylhexyl adipate	µg/L	U.S.	400	EPA	<4	<8	<4	<4	<4	<4	<4	<8	NA
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	U.S.	20,000/6	SWEG/EPA	<4	<8	<4	<4	<4	<4	<4	<8	NA
4-Ethylmorpholine	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
1-Formylpiperidine	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Heptanoic acid	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Heptanone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
gamma-Hexalactone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Hexanoic acid	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-Hexanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Hydroxybenzothiazole	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Ibuprofen	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Iodoform	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Isophorone	µg/L	U.S.	100	EPA HA	<4	<8	<4	<4	<4	<4	<4	<8	NA
4-Isopropylphenol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Lauramide	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Lauric acid (Dodecanoic acid)	µg/L	U.S.			<120	<240	<120	<120	<120	<120	<120	<240	NA
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Mercaptobenzothiazole	µg/L	U.S.	30,000	SWEG	<40	<80	<40	<40	<40	<40	<40	<80	NA
2-Methyl-2,4-pentanediol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
1-Methyl-2-pyrrolidinone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Methyl-4-hydroxybenzoate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Methyl sulfone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Methyl butyric acid	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA
2-Methylthiobenzothiazole	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Monomethyl phthalate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Myristic acid	µg/L	U.S.			<24	<48	<24	<24	<24	<24	<24	<48	NA
(+)-Neomenthol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Nicotine	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Nonadecane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Nonanoic acid	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum		WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Maximum Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
1-Octadecanol	µg/L	U.S.			<12	<24	<12	<12	<12	<12	<12	<24	NA
Octamethylcyclotetrasiloxane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Octanoic acid	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
4-tert-Octylphenol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Oleic acid	µg/L	U.S.			<40	<80	<40	<40	<40	<40	<40	<80	NA
Oxindole	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Palmitic acid	µg/L	U.S.			<120	<240	<120	<120	<120	<120	<120	<240	NA
Palmitoleic acid	µg/L	U.S.			<100	<200	<100	<100	<100	<100	<100	<200	NA
Pentacosane	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
sec-Phenethyl alcohol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Phenol	µg/L	U.S.	4,000	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Phenoxyethanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
N-Phenyl-2-naphthylamine	µg/L	U.S.	260,000	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Phenyl-2-propanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Phenylacetic acid	µg/L	U.S.			<16	<32	<16	<16	<16	<16	<16	<32	NA
Phenethyl alcohol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
2-Phenylphenol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Salicyclic Acid	µg/L	U.S.			<32	<64	<32	<32	<32	<32	<32	<64	NA
trans-Squalene	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Stearic acid	µg/L	U.S.			<100	<200	<100	<100	<100	<100	<100	<200	NA
1-Tetradecanol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Tetramethylsuccinonitrile	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Tetramethyl thiourea	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Tetramethylurea	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Thymol	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Tributylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
Tributyl phosphate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Triethyl phosphate	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Tripropylene glycol monomethyl ether	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Undecanoic acid	µg/L	U.S.			<24	<48	<24	<24	<24	<24	<24	<48	NA
2-Undecanone	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Valeric acid (Pentanoic acid)	µg/L	U.S.			<24	<48	<24	<24	<24	<24	<24	<48	NA
Vanillin	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Acid Extractables-EPA 625 List													
4-Chloro-3-methylphenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-Chlorophenol	µg/L	U.S.	40	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
2,4-Dichlorophenol	µg/L	U.S.	20	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
2,4-Dimethylphenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2,4-Dinitrophenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-Methyl-4,6-dinitrophenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-Nitrophenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum	Maximum	WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
4-Nitrophenol	µg/L	U.S.	60	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Pentachlorophenol	µg/L	U.S.	1	EPA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Phenol	µg/L	U.S.	4,000/2,000	SWEG/EPA HA	<4	<8	<4	<4	<4	<4	<4	<8	NA
2,4,5-Trichlorophenol	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2,4,6-Trichlorophenol	µg/L	U.S.	10	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Base/Neutral Extractables - EPA 625 List													
Benzidine	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
3,3-Dichlorobenzidine	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
bis-(2-Ethylhexyl)phthalate	µg/L	U.S.	20,000/6	SWEG/EPA	<4	<8	<4	<4	<4	<4	<4	<8	NA
Benzyl butyl phthalate	µg/L	U.S.	7,000	EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
Dibutylphthalate	µg/L	U.S.	40,000/4,000	SWEG/EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
Diethylphthalate	µg/L	U.S.	30,000	EPA DWEL	<4	<8	<4	<4	<4	<4	<4	<8	NA
Dimethylphthalate	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Di-n-octyl phthalate	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
N-Nitrosodimethylamine	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
N-Nitrosodiphenylamine	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
N-Nitrosodi-n-propylamine	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2,4-Dinitrotoluene	µg/L	U.S.	100	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
2,6-Dinitrotoluene	µg/L	U.S.	40	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Isophorone	µg/L	U.S.	100	EPA HA	<4	<8	<4	<4	<4	<4	<4	<8	NA
Nitrobenzene	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Acenaphthene	µg/L	U.S.	2000	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Acenaphthylene	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Anthracene	µg/L	U.S.	10,000	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Benzo(a)anthracene	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
Benzo(a)pyrene	µg/L	U.S.	0.2	EPA	<5	<10	<5	<5	<5	<5	<5	<10	NA
Benzo(b)fluoranthene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Benzo(ghi)perylene	µg/L	U.S.			<5	<10	<5	<5	<5	<5	<5	<10	NA
Benzo(k)fluoroanthene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Chrysene	µg/L	U.S.			<10	<20	<10	<10	<10	<10	<10	<20	NA
Dibenzo(a,h)anthracene	µg/L	U.S.			<5	<10	<5	<5	<5	<5	<5	<10	NA
Fluoranthene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Fluorene	µg/L	U.S.	1,000	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Indeno(1,2,3-cd)pyrene	µg/L	U.S.			<5	<10	<5	<5	<5	<5	<5	<10	NA
Naphthalene	µg/L	U.S.	100	EPA HA	<20	<40	<20	<20	<20	<20	<20	<40	NA
Phenanthrene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
Pyrene	µg/L	U.S.			<4	<8	<4	<4	<4	<4	<4	<8	NA
bis(2-Chloroethyl) ether	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
bis(2-Chloroethoxy) methane	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
bis(2-Chloroisopropyl) ether	µg/L	U.S.	300	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
4-Bromophenyl phenyl ether	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
4-Chlorophenyl phenyl ether	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA
2-Chloronaphthalene	µg/L	U.S.			<8	<16	<8	<8	<8	<8	<8	<16	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum	Maximum	WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
1,2-Dichlorobenzene	µg/L	U.S.	600	EPA	<8	<16	<8	<8	<8	<8	<8	<16	NA
1,3-Dichlorobenzene	µg/L	U.S.	600	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
1,4-Dichlorobenzene	µg/L	U.S.	75	EPA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Hexachlorobenzene	µg/L	U.S.	30	EPA DWEL	<8	<16	<8	<8	<8	<8	<8	<16	NA
Hexachlorobutadiene	µg/L	U.S.	1	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Hexachlorocyclopentadiene	µg/L	U.S.	50	EPA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Hexachloroethane	µg/L	U.S.	1	EPA HA	<8	<16	<8	<8	<8	<8	<8	<16	NA
1,2,4-Trichlorobenzene	µg/L	U.S.	70	EPA	<8	<16	<8	<8	<8	<8	<8	<16	NA
Alcohols (DAI/GC/MS)													
1-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
Ethanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
Methanol	µg/L	U.S.	40000	SWEG	<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Methyl-1-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Methyl-2-butanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
3-Methyl-1-butanol (Isopentanol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Methyl-1-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Methyl-2-propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
1-Pentanol (Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Pentanol (sec-Amyl alcohol)	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
3-Pentanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
1-Propanol	µg/L	U.S.			<100	<100	<100	<100	<100	<100	<100	<100	NA
2-Propanol (Isopropanol)	µg/L	U.S.			550	1220	1210	307	<100	<100	<100	450	NA
Glycols (DAI/GC/MS)													
1,2-Ethanediol (Ethylene glycol)	µg/L	U.S.	12000/4000	MORD/SWEG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	NA
1,2-Propanediol (Propylene glycol)	µg/L	U.S.	1700000	SWEG	<500	<500	<500	<500	<500	<500	<500	<500	NA
Carboxylates (CE)													
Acetate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125	<125	NA
Formate	µg/L	U.S.	2,500,000	SWEG	<125	<125	<125	<125	<125	<125	<125	<125	NA
Glycolate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125	<125	NA
Glyoxylate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125	<125	NA
Lactate	µg/L	U.S.			<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	NA
Oxalate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125	<125	NA
Propionate	µg/L	U.S.			<125	<125	<125	<125	<125	<125	<125	<125	NA
Aldehydes													
Formaldehyde	µg/L	U.S.	12,000/1,000	SWEG/EPA HA	13	21	18	<2	<2	<2	<2	20	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission					ISS 15A/Exp. 18								
Sample Location			Potable Water Maximum	Maximum	WPA PWD Hot	WPA PWD Hot	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient before 2L flush
Sample Description		Test	Contaminant	Contaminant	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		Conducted	Level	Level	12-Dec-2008	19-Dec-2008	29-Dec-2008	02-Jan-2009	14-Jan-2009	21-Jan-2009	30-Jan-2009	30-Jan-2009	18-Mar-2009
Analysis/Sample ID	Units	by	(MCL)	Source	20090330002	20090330003	20090330004	20090330005	20090330006	20090330007	20090330008	20090330009	20090330013
Amines (CE)													
Ethylamine	µg/L	U.S.	Moncalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125	<125	NA
Methylamine	µg/L	U.S.	Moncalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125	<125	NA
n-Propylamine	µg/L	U.S.	Moncalkylamines 2000	SWEG	<125	<125	<125	<125	<125	<125	<125	<125	NA
Trimethylamine	µg/L	U.S.	Trialkylamines 400	SWEG	<125	<125	<125	<125	<125	<125	<125	<125	NA
Non-volatiles (LC/UV-VIS)													
Urea	µg/L	U.S.			<800	<800	<800	<800	<800	<800	<800	<800	NA
Caprolactam	µg/L	U.S.	100,000	SWEG	<4	<8	<4	<4	<4	<4	<4	<8	NA
Organic Carbon Recovery	percent	U.S.			44.82	76.95	73.31	58.59	0	0	5.30	56.68	NA
Unaccounted Organic Carbon	mg/L	U.S.			0.46	0.24	0.32	0.19	0.29	0.32	0.30	0.34	NA

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
Physical Characteristics												
pH	pH units	6.21	5.68	7.27	7.83	7.66	7.00	6.73	6.75	6.39	7.57	7.49
Conductivity	µS/cm	2	3	3	2	1	1	1	1	2	1	2
Turbidity	NTU	0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA
Color	Pt-Co unit	NA	<3	<3	<3	<3	NA	NA	NA	NA	<3	NA
Taste	TTN	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Odor	TON	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Solids	mg/L	<5	<5	<5	<5	<5	<5	NA	<5	NA	<5	NA
Iodine (LCV)												
Total I	mg/L	0.44	0.50	0.43	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iodine	mg/L	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iodide	mg/L	0.22	0.45	0.38	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anions (IC/ISE)												
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Fluoride	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	<0.08	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Cations (IC)												
Ammonia as Nitrogen (NH3-N)	mg/L	<0.002	<0.002	0.015	0.056	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Metals (ICP/MS)												
Calcium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Magnesium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Potassium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aluminum	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Antimony	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L	2	11	22	20	26	2	1	<1	<1	<1	<1
Beryllium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	µg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Location		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Description												
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
Copper	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3
Iron	µg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Lead	µg/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	µg/L	11	24	28	24	31	22	13	12	17	23	25
Selenium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	µg/L	<2	<2	<2	16	<2	<2	<2	<2	<2	<2	<2
Zinc	µg/L	1	2	<1	<1	<1	<1	<1	1	1	<1	<1
Total Organic Carbon (Sievers)												
Total Inorganic Carbon	mg/L	0.84	0.70	0.95	0.85	0.86	0.75	0.68	0.60	0.57	0.92	0.70
Total Organic Carbon	mg/L	0.19	0.49	1.11	0.78	0.37	0.19	0.19	0.18	0.16	0.18	0.21
Total Polysaccharides												
Total Polysaccharides (as Sucrose)	mg/L	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics												
Acetone	µg/L	113	139	117	11	<2	<2	<2	<2	<2	<2	<2
Acryloniltrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromodichloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	6	<2
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Location												
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl ether	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Hexanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iodomethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl acrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Nitropropane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Pentachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
Tetrahydrofuran	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p-Xylene	µg/L	0.6	0.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
o-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Extractable Organics												
Acetophenone	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Benzaldehyde	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Benzoic acid	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24
Benzothiazole	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Benzyl alcohol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Benzyl butyl phthlate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Butoxyethanol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-(2-Butoxyethoxy)ethanol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
n-Butylpalmitate	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Butylated hydroxyanisole (BHA)	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N-Butylbenzenesulfonamide	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
3-tert-Butylphenol	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24
Caffeine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
tris-2-Chloroethyl phosphate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Cholesterol	µg/L	<64	<32	<64	<32	<32	<64	<64	<64	<64	<64	<64
o-Cresol (2-Methylphenol)	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Cyclododecane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Decamethylcyclopentasiloxane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Decanoic acid	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2,4-Di-t-butylphenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
1,4 Diacetylbenzene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Dibutylformamide	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dibutyl phthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dibutylamine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Diethyl-m-toluamide	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Location												
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
Diethylphthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Diethylene glycol monoethyl ether	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Diethylformamide	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24
Diiodomethane (Methyl iodide)	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Diisopropyl adipate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dimethyl phthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Dimethyl acetamide	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Dimethylbenzylamine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N,N-Dimethylformamide	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Dipropylene glycol methyl ether	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dodecamethylcyclohexasiloxane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Ethoxyethanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Ethyl-1-hexanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Ethylhexanoic acid	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
bis-2-Ethylhexyl adipate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	12	<8	<8
4-Ethylmorpholine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
1-Formylpiperidine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Heptanoic acid	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Heptanone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
gamma-Hexalactone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Hexanoic acid	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-Hexanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Hydroxybenzothiazole	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Ibuprofen	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Iodoform	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Isophorone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
4-Isopropylphenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Lauramide	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Lauric acid (Dodecanoic acid)	µg/L	<240	<120	<240	<120	<120	<240	<240	<240	<240	<240	<240
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Mercaptobenzothiazole	µg/L	<80	<40	<80	<40	<40	<80	<80	<80	<80	<80	<80
2-Methyl-2,4-pentanediol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
1-Methyl-2-pyrrolidinone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Methyl-4-hydroxybenzoate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Methyl sulfone	µg/L	<8	<4	<8	<4	<4	69	83	74	74	84	87
2-Methyl butyric acid	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24
2-Methylthiobenzothiazole	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Monomethyl phthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Myristic acid	µg/L	<48	<24	<48	<24	<24	<48	<48	<48	<48	<48	<48
(+)-Neomenthol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Nicotine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Nonadecane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Nonanoic acid	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Location		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Description												
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
1-Octadecanol	µg/L	<24	<12	<24	<12	<12	<24	<24	<24	<24	<24	<24
Octamethylcyclotetrasiloxane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Octanoic acid	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
4-tert-Octylphenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Oleic acid	µg/L	<80	<40	<80	<40	<40	<80	<80	<80	<80	<80	<80
Oxindole	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Palmitic acid	µg/L	<240	<120	<240	<120	<120	<240	<240	<240	<240	<240	<240
Palmitoleic acid	µg/L	<200	<100	<200	<100	<100	<200	<200	<200	<200	<200	<200
Pentacosane	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
sec-Phenethyl alcohol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Phenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Phenoxyethanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
N-Phenyl-2-naphthylamine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Phenyl-2-propanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Phenylacetic acid	µg/L	<32	<16	<32	<16	<16	<32	<32	<32	<32	<32	<32
Phenethyl alcohol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2-Phenylphenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Salicyclic Acid	µg/L	<64	<32	<64	<32	<32	<64	<64	<64	<64	<64	<64
trans-Squalene	µg/L	<16	<8	<16	<8	<8	<16	<16	22	<16	<16	<16
Stearic acid	µg/L	<200	<100	<200	<100	<100	<200	<200	<200	<200	<200	<200
1-Tetradecanol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Tetramethylsuccinonitrile	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Tetramethyl thiourea	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Tetramethylurea	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Thymol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Tributylamine	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Tributyl phosphate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Triethyl phosphate	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Tripropylene glycol monomethyl ether	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Undecanoic acid	µg/L	<48	<24	<48	<24	<24	<48	<48	<48	<48	<48	<48
2-Undecanone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Valeric acid (Pentanoic acid)	µg/L	<48	<24	<48	<24	<24	<48	<48	<48	<48	<48	<48
Vanillin	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Acid Extractables-EPA 625 List												
4-Chloro-3-methylphenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-Chlorophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,4-Dichlorophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,4-Dimethylphenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,4-Dinitrophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-Methyl-4,6-dinitrophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-Nitrophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Location		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Description												
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
4-Nitrophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Pentachlorophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Phenol	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
2,4,5-Trichlorophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,4,6-Trichlorophenol	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Base/Neutral Extractables - EPA 625 List												
Benzidine	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
3,3-Dichlorobenzidine	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
bis-(2-Ethylhexyl)phthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	12	<8	<8
Benzyl butyl phthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dibutylphthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Diethylphthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Dimethylphthalate	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Di-n-octyl phthalate	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
N-Nitrosodimethylamine	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
N-Nitrosodiphenylamine	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
N-Nitrosodi-n-propylamine	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,4-Dinitrotoluene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2,6-Dinitrotoluene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Isophorone	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Nitrobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Acenaphthene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Acenaphthylene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Anthracene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Benzo(a)anthracene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Benzo(a)pyrene	µg/L	<10	<5	<10	<5	<5	<10	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Benzo(ghi)perylene	µg/L	<10	<5	<10	<5	<5	<10	<10	<10	<10	<10	<10
Benzo(k)fluoroanthene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Chrysene	µg/L	<20	<10	<20	<10	<10	<20	<20	<20	<20	<20	<20
Dibenzo(a,h)anthracene	µg/L	<10	<5	<10	<5	<5	<10	<10	<10	<10	<10	<10
Fluoranthene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Fluorene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Indeno(1,2,3-cd)pyrene	µg/L	<10	<5	<10	<5	<5	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	<40	<20	<40	<20	<20	<40	<40	<40	<40	<40	<40
Phenanthrene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Pyrene	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
bis(2-Chloroethyl) ether	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
bis(2-Chloroethoxy) methane	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
bis(2-Chloroisopropyl) ether	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
4-Bromophenyl phenyl ether	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
4-Chlorophenyl phenyl ether	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
2-Chloronaphthalene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
1,2-Dichlorobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
1,3-Dichlorobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
1,4-Dichlorobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Hexachlorobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Hexachlorobutadiene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Hexachlorocyclopentadiene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Hexachloroethane	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
1,2,4-Trichlorobenzene	µg/L	<16	<8	<16	<8	<8	<16	<16	<16	<16	<16	<16
Alcohols (DAI/GC/MS)												
1-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Glycols (DAI/GC/MS)												
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Carboxylates (CE)												
Acetate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Formate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glycolate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Aldehydes												
Formaldehyde	µg/L	7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18		Soyuz 17/Exp. 18	ISS 2JA/Exp. 20						ISS 17A/Exp. 20	
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Hot	WPA PWD Ambient	WPA PWD Ambient	WPA PWD Hot
Sample Description		Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water	Potable Water
Sample Date		23-Mar-2009	25-Mar-2009	02-Apr-2009	15-Apr-09	4-May-09	16-Jun-09	16-Jun-09	24-Jul-09	24-Jul-09	04-Aug-2009	04-Aug-2009
Analysis/Sample ID	Units	20090330014	20090330017	20090419002	20090803001	20090803002	20090803003	20090803004	20090803005	20090803006	20090914001	20090914002
Amines (CE)												
Ethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)												
Urea	µg/L	<800	<800	<800	<800	<800	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	<8	<4	<8	<4	<4	<8	<8	<8	<8	<8	<8
Organic Carbon Recovery	percent	39.70	17.80	59.64	0.87	0.00	9.22	11.15	20.87	17.34	14.45	10.57
Unaccounted Organic Carbon	mg/L	0.11	0.40	0.45	0.77	0.37	0.17	0.17	0.14	0.13	0.15	0.19

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
Physical Characteristics												
pH	pH units	5.96	5.65	7.70	7.48	7.06	7.43	7.11	7.79	6.91	6.82	6.49
Conductivity	µS/cm	3	7	6	3	3	3	3	9	3	3	3
Turbidity	NTU	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Color	Pt-Co unit	NA	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Taste	TTN	NA	NA	1	<1	<1	1	1	NA	NA	NA	NA
Odor	TON	NA	NA	1	1	<1	<1	<1	NA	NA	NA	NA
Total Solids	mg/L	NA	NA	<5	<5	NA	NA	<5	NA	<5	<5	<5
Iodine (LCV)												
Total I	mg/L	<0.05	<0.05	2.37	2.68	2.55	2.53	2.20	2.41	2.54	2.70	2.70
Iodine	mg/L	<0.05	<0.05	0.21	1.40	1.89	1.90	1.02	1.36	1.40	1.26	1.55
Iodide	mg/L	<0.05	<0.05	2.16	1.28	0.66	0.63	1.18	1.05	1.14	1.44	1.15
Anions (IC/ISE)												
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Fluoride	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
Cations (IC)												
Ammonia as Nitrogen (NH3-N)	mg/L	<0.002	<0.002	0.006	0.003	<0.002	0.003	0.007	<0.002	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Metals (ICP/MS)												
Calcium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01
Magnesium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Potassium	mg/L	<0.01	0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	<0.01	0.01	0.01
Sodium	mg/L	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aluminum	µg/L	<2	<2	3	3	<2	<2	<2	2	<2	<2	<2
Antimony	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Beryllium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	µg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
Copper	µg/L	1	<1	<1	<1	<1	<1	3	2	<1	<1	<1
Iron	µg/L	<5	<5	33	<5	<5	<5	<5	<5	<5	<5	<5
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	2	<1	8	1	<1	<1	1	<1	<1	2	<1
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	<1	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Nickel	µg/L	30	27	1690	415	52	134	255	97	114	247	118
Selenium	µg/L	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1
Silver	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Zinc	µg/L	2	3	15	4	<1	2	3	6	1	4	3
Total Organic Carbon (Sievers)												
Total Inorganic Carbon	mg/L	0.79	0.83	0.98	0.50	0.43	0.46	0.50	0.93	0.98	1.06	0.98
Total Organic Carbon	mg/L	0.21	0.20	1.05	0.35	0.23	0.19	0.47	0.23	0.12	0.12	0.09
Total Polysaccharides												
Total Polysaccharides (as Sucrose)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organics												
Acetone	µg/L	<2	<2	174#	31	11	9	42	16	<2	<2	<2
Acryloniltrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	µg/L	<0.4	<0.4	0.8	2.1	0.5	0.6	0.9	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromodichloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	µg/L	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chloromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl ether	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Hexanone	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Iodomethane	µg/L	<2	<2	17	46	26	29	38	10	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl acrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1	0.4
Methyl methacrylate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Nitropropane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Pentachloroethane	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	<0.4	<0.4	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4	<0.4

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
Tetrahydrofuran	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	µg/L	NA	NA	0.6	1.2	0.6	0.7	0.5	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.6	<0.4	<0.4	<0.4
o-Xylene	µg/L	<0.4	<0.4	0.5	<0.4	0.4	0.5	0.5	0.4	<0.4	<0.4	<0.4
Extractable Organics												
Acetophenone	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Benzaldehyde	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Benzoic acid	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12
Benzothiazole	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Benzyl alcohol	µg/L	<8	<8	<8	13	<8	<8	14	<8	<8	<4	<4
Benzyl butyl phthlate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Butoxyethanol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-(2-Butoxyethoxy)ethanol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
n-Butylpalmitate	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Butylated hydroxyanisole (BHA)	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N-Butylbenzenesulfonamide	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
3-tert-Butylphenol	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12
Caffeine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
tris-2-Chloroethyl phosphate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Cholesterol	µg/L	<64	<64	<64	<32	<64	<64	<64	<64	<64	<32	<32
o-Cresol (2-Methylphenol)	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Cyclododecane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Decamethylcyclopentasiloxane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Decanoic acid	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2,4-Di-t-butylphenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
1,4 Diacetylbenzene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Dibutylformamide	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dibutyl phthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dibutylamine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Diethyl-m-toluamide	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
Diethylphthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Diethylene glycol monoethyl ether	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Diethylformamide	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12
Diiodomethane (Methyl iodide)	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Diisopropyl adipate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dimethyl phthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Dimethyl acetamide	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Dimethylbenzylamine	µg/L	<16	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N,N-Dimethylformamide	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Dipropylene glycol methyl ether	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dodecamethylcyclohexasiloxane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Ethoxyethanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Ethyl-1-hexanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Ethylhexanoic acid	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
bis-2-Ethylhexyl adipate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
4-Ethylmorpholine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
1-Formylpiperidine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Heptanoic acid	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Heptanone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
gamma-Hexalactone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Hexanoic acid	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-Hexanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Hydroxybenzothiazole	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Ibuprofen	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Iodoform	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Isophorone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
4-Isopropylphenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Lauramide	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Lauric acid (Dodecanoic acid)	µg/L	<240	<240	<240	<120	<240	<240	<240	<240	<240	<120	<120
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Mercaptobenzothiazole	µg/L	<80	<80	<80	<40	<80	<80	<80	<80	<80	<40	<40
2-Methyl-2,4-pentanediol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
1-Methyl-2-pyrrolidinone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Methyl-4-hydroxybenzoate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Methyl sulfone	µg/L	68	113	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Methyl butyric acid	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12
2-Methylthiobenzothiazole	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Monomethyl phthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Myristic acid	µg/L	<48	<48	<48	<24	<48	<48	<48	<48	<48	<24	<24
(+)-Neomenthol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Nicotine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Nonadecane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Nonanoic acid	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
1-Octadecanol	µg/L	<24	<24	<24	<12	<24	<24	<24	<24	<24	<12	<12
Octamethylcyclotetrasiloxane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Octanoic acid	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
4-tert-Octylphenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Oleic acid	µg/L	<80	<80	<80	<40	<80	<80	<80	<80	<80	<40	<40
Oxindole	µg/L	<8	<8	<8	<4	<4	<8	<8	<8	<8	<4	<4
Palmitic acid	µg/L	<240	<240	<240	<120	<240	<240	<240	<240	<240	<120	<120
Palmitoleic acid	µg/L	<200	<200	<200	<100	<200	<200	<200	<200	<200	<100	<100
Pentacosane	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
sec-Phenethyl alcohol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Phenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Phenoxyethanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
N-Phenyl-2-naphthylamine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Phenyl-2-propanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Phenylacetic acid	µg/L	<32	<32	<32	<16	<32	<32	<32	<32	<32	<16	<16
Phenethyl alcohol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2-Phenylphenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Salicyclic Acid	µg/L	<64	<64	<64	<32	<64	<64	<64	<64	<64	<32	<32
trans-Squalene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Stearic acid	µg/L	<200	<200	<200	<100	<200	<200	<200	<200	<200	<100	<100
1-Tetradecanol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Tetramethylsuccinonitrile	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Tetramethyl thiourea	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Tetramethylurea	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Thymol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Tributylamine	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Tributyl phosphate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Triethyl phosphate	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Tripropylene glycol monomethyl ether	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Undecanoic acid	µg/L	<48	<48	<48	<24	<48	<48	<48	<48	<48	<24	<24
2-Undecanone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Valeric acid (Pentanoic acid)	µg/L	<48	<48	<48	<24	<48	<48	<48	<48	<48	<24	<24
Vanillin	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Acid Extractables-EPA 625 List												
4-Chloro-3-methylphenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-Chlorophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,4-Dichlorophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,4-Dimethylphenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,4-Dinitrophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-Methyl-4,6-dinitrophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-Nitrophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
4-Nitrophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Pentachlorophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Phenol	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
2,4,5-Trichlorophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,4,6-Trichlorophenol	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Base/Neutral Extractables - EPA 625 List												
Benzidine	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
3,3-Dichlorobenzidine	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
bis-(2-Ethylhexyl)phthalate	µg/L	<8	<8	<8	<4	<8	<8	<16	<8	<8	<4	<4
Benzyl butyl phthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dibutylphthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Diethylphthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Dimethylphthalate	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Di-n-octyl phthalate	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
N-Nitrosodimethylamine	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
N-Nitrosodiphenylamine	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
N-Nitrosodi-n-propylamine	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,4-Dinitrotoluene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2,6-Dinitrotoluene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Isophorone	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Nitrobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Acenaphthene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Acenaphthylene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Anthracene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Benzo(a)anthracene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Benzo(a)pyrene	µg/L	<10	<10	<10	<5	<10	<10	<10	<10	<10	<5	<5
Benzo(b)fluoranthene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Benzo(ghi)perylene	µg/L	<10	<10	<10	<5	<10	<10	<10	<10	<10	<5	<5
Benzo(k)fluoroanthene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Chrysene	µg/L	<20	<20	<20	<10	<20	<20	<20	<20	<20	<10	<10
Dibenzo(a,h)anthracene	µg/L	<10	<10	<10	<5	<10	<10	<10	<10	<10	<5	<5
Fluoranthene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Fluorene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Indeno(1,2,3-cd)pyrene	µg/L	<10	<10	<10	<5	<10	<10	<10	<10	<10	<5	<5
Naphthalene	µg/L	<40	<40	<40	<20	<40	<40	<40	<40	<40	<20	<20
Phenanthrene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Pyrene	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
bis(2-Chloroethyl) ether	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
bis(2-Chloroethoxy) methane	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
bis(2-Chloroisopropyl) ether	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
4-Bromophenyl phenyl ether	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
4-Chlorophenyl phenyl ether	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
2-Chloronaphthalene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
1,2-Dichlorobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
1,3-Dichlorobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
1,4-Dichlorobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Hexachlorobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Hexachlorobutadiene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Hexachlorocyclopentadiene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Hexachloroethane	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
1,2,4-Trichlorobenzene	µg/L	<16	<16	<16	<8	<16	<16	<16	<16	<16	<8	<8
Alcohols (DAI/GC/MS)												
1-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Ethanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	1040	<100	<100	<100	225	<100	<100	<100	<100
Glycols (DAI/GC/MS)												
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Carboxylates (CE)												
Acetate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Formate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glycolate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Aldehydes												
Formaldehyde	µg/L	<2	<2	<2	18	<2	<2	13	19	17	15	15

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		Soyuz 18/Exp. 20		ISS ULF2/Exp. 18					ISS 15A/Exp. 18			
Sample Location		WPA PWD Hot	WPA PWD Ambient	WPA RIP	WPA RIP	WPA RIP	WPA RIP	WPA PWD Aux Port	WPA RIP	WPA RIP	WPA RIP	WPA RIP
Sample Description		Potable Water	Potable Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		22-Sep-2009	22-Sep-2009	22-Nov-2008	25-Nov-2008	26-Nov-2008	26-Nov-2008	26-Nov-2008	08-Dec-2008	09-Feb-2009	27-Feb-2009	10-Mar-2009
Analysis/Sample ID	Units	20091021005	20091021006	20081202012	20081202013	20081202014	20081202015	20081202016	20090330001	20090330010	20090330011	20090330012
Amines (CE)												
Ethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)												
Urea	µg/L	<800	<800	<800	<800	<800	<800	<800	<800	<800	<800	<800
Caprolactam	µg/L	<8	<8	<8	<4	<8	<8	<8	<8	<8	<4	<4
Organic Carbon Recovery	percent	8.26	14.49	69.97	12.31	4.46	5.21	38.89	8.49	5.67	5.12	7.04
Unaccounted Organic Carbon	mg/L	0.19	0.17	0.32	0.31	0.22	0.18	0.29	0.21	0.11	0.11	0.08

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
Physical Characteristics					
pH	pH units	6.03	5.87	5.47	7.45
Conductivity	µS/cm	3	2	3	3
Turbidity	NTU	<0.1	<0.1	<0.1	<0.1
Color	Pt-Co unit	NA	NA	NA	<3
Taste	TTN	NA	NA	1	NA
Odor	TON	NA	NA	<1	NA
Total Solids	mg/L	<5	<5	<5	NA
Iodine (LCV)					
Total I	mg/L	2.71	1.83	2.52	2.54
Iodine	mg/L	1.97	1.23	1.87	1.68
Iodide	mg/L	0.74	0.60	0.65	0.86
Anions (IC/ISE)					
Bromide	mg/L	<0.5	<0.5	<0.5	<0.5
Chloride	mg/L	<0.15	<0.15	<0.15	<0.15
Fluoride	mg/L	<0.1	<0.1	<0.1	<0.1
Nitrate as Nitrogen (NO3-N)	mg/L	<0.11	<0.11	<0.11	<0.11
Nitrite as Nitrogen (NO2-N)	mg/L	NA	NA	NA	<0.08
Phosphate as P (PO4-P)	mg/L	<0.24	<0.24	<0.24	<0.24
Sulfate	mg/L	<0.75	<0.75	<0.75	<0.75
Cations (IC)					
Ammonia as Nitrogen (NH3-N)	mg/L	<0.002	<0.002	<0.002	<0.002
Lithium	mg/L	<0.002	<0.002	<0.002	<0.002
Metals (ICP/MS)					
Calcium	mg/L	<0.01	<0.01	<0.01	<0.01
Magnesium	mg/L	<0.01	<0.01	<0.01	<0.01
Potassium	mg/L	<0.01	<0.01	<0.01	<0.01
Sodium	mg/L	<0.01	<0.01	<0.01	<0.01
Aluminum	µg/L	<2	<2	<2	<2
Antimony	µg/L	<2	<2	<2	<2
Arsenic	µg/L	<1	<1	<1	<1
Barium	µg/L	<1	<1	<1	<1
Beryllium	µg/L	<1	<1	<1	<1
Cadmium	µg/L	<1	<1	<1	<1
Chromium	µg/L	<5	<5	<5	<5
Cobalt	µg/L	<1	<1	<1	<1

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
Copper	µg/L	<1	<1	<1	<1
Iron	µg/L	<5	<5	<5	<5
Lead	µg/L	<1	<1	<1	<1
Manganese	µg/L	<1	<1	<1	<1
Mercury	µg/L	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	<1	<1	<1	<1
Nickel	µg/L	37	76	35	79
Selenium	µg/L	<1	<1	<1	<1
Silver	µg/L	<1	<2	<2	<2
Zinc	µg/L	2	2	2	<1
Total Organic Carbon (Sievers)					
Total Inorganic Carbon	mg/L	0.76	0.96	0.72	0.78
Total Organic Carbon	mg/L	0.09	0.12	0.07	0.10
Total Polysaccharides					
Total Polysaccharides (as Sucrose)	mg/L	NA	NA	NA	NA
Volatile Organics					
Acetone	µg/L	<2	<2	<2	<2
Acryloniltrile	µg/L	<2	<2	<2	<2
Allyl chloride (3-Chloropropene)	µg/L	<2	<2	<2	<2
Benzene	µg/L	<0.4	<0.4	<0.4	<0.4
Bromobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
Bromochloromethane	µg/L	<4	<4	<4	<4
Bromodichloromethane	µg/L	<0.4	<0.4	<0.4	<0.4
Bromoform	µg/L	<2	<2	<2	<2
Bromomethane	µg/L	<2	<2	<2	<2
2-Butanone (Methyl ethyl ketone)	µg/L	<2	<2	<2	<2
n-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
sec-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
tert-Butylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
Carbon disulfide	µg/L	<2	<2	<2	<2
Carbon tetrachloride	µg/L	<0.4	<0.4	<0.4	<0.4
Chloroacetonitrile	µg/L	<10	<10	<10	<10
Chlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1-Chlorobutane (Butyl chloride)	µg/L	<0.4	<0.4	<0.4	<0.4
Chloroethane	µg/L	<2	<2	<2	<2
Chloroform	µg/L	<0.4	<0.4	<0.4	<0.4
Chloromethane	µg/L	<2	<2	<2	<2
2-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4
4-Chlorotoluene	µg/L	<0.4	<0.4	<0.4	<0.4
Dibromochloromethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<2	<2	<2	<2

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
1,2-Dibromoethane (EDB)	µg/L	<0.4	<0.4	<0.4	<0.4
Dibromomethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,2-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
trans-1,4-Dichloro-2-butene	µg/L	<0.4	<0.4	<0.4	<0.4
Dichlorodifluoromethane	µg/L	<2	<2	<2	<2
1,1-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4
cis1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4
1,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4
1,3-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4
2,2-Dichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4
1,1-Dichloropropanone	µg/L	<2	<2	<2	<2
1,1-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4
cis-1,3-Dichloropropene	µg/L	<0.4	<0.4	<0.4	<0.4
trans-1,3-Dichloropropene	µg/L	<2	<2	<2	<2
Diethyl ether	µg/L	<2	<2	<2	<2
Ethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
Ethyl methacrylate	µg/L	<2	<2	<2	<2
Hexachlorobutadiene	µg/L	<2	<2	<2	<2
Hexachloroethane	µg/L	<2	<2	<2	<2
2-Hexanone	µg/L	<2	<2	<2	<2
Iodomethane	µg/L	<2	<2	<2	<2
Isopropylbenzene (Cumene)	µg/L	<0.4	<0.4	<0.4	<0.4
4-Isopropyltoluene (Cymene)	µg/L	<0.4	<0.4	<0.4	<0.4
Methacrylonitrile	µg/L	<2	<2	<2	<2
Methyl acrylate	µg/L	<2	<2	<2	<2
Methyl-t-butylether (MTBE)	µg/L	<2	<2	<2	<2
Methylene chloride (Dichloromethane)	µg/L	<0.4	<0.4	<0.4	<0.4
Methyl methacrylate	µg/L	<2	<2	<2	<2
4-Methyl-2-pentanone	µg/L	<0.4	<0.4	<0.4	<0.4
Naphthalene	µg/L	<0.4	<0.4	<0.4	<0.4
Nitrobenzene	µg/L	<2	<2	<2	<2
2-Nitropropane	µg/L	<2	<2	<2	<2
Pentachloroethane	µg/L	<2	<2	<2	<2
Propionitrile (Ethyl cyanide)	µg/L	<10	<10	<10	<10
n-Propylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
Styrene	µg/L	<0.4	<0.4	<0.4	<0.4
1,1,1,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,1,2,2-Tetrachloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
Tetrachloroethene	µg/L	<0.4	<0.4	<0.4	<0.4

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
Tetrahydrofuran	µg/L	<2	<2	<2	<2
Toluene	µg/L	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1,2,4-Trichlorobenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1,1,1-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,1,2-Trichloroethane	µg/L	<0.4	<0.4	<0.4	<0.4
Trichloroethene	µg/L	<0.4	<0.4	<0.4	<0.4
Trichlorofluoromethane	µg/L	<0.4	<0.4	<0.4	<0.4
1,2,3-Trichloropropane	µg/L	<0.4	<0.4	<0.4	<0.4
1,2,4-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
1,3,5-Trimethylbenzene	µg/L	<0.4	<0.4	<0.4	<0.4
Vinyl Acetate	µg/L	<2	<2	<2	<2
Vinyl Chloride	µg/L	<2	<2	<2	<2
m&p-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4
o-Xylene	µg/L	<0.4	<0.4	<0.4	<0.4
Extractable Organics					
Acetophenone	µg/L	<16	<16	<8	<16
Benzaldehyde	µg/L	<8	<8	<4	<8
Benzoic acid	µg/L	<24	<24	<12	<24
Benzothiazole	µg/L	<8	<8	<4	<8
Benzyl alcohol	µg/L	<8	<8	<4	<8
Benzyl butyl phthlate	µg/L	<8	<8	<4	<8
2-Butoxyethanol	µg/L	<16	<16	<8	<16
2-(2-Butoxyethoxy)ethanol	µg/L	<16	<16	<8	<16
2-(2-Butoxyethoxy)ethyl acetate	µg/L	<8	<8	<4	<8
n-Butylpalmitate	µg/L	<16	<16	<8	<16
Butylated hydroxyanisole (BHA)	µg/L	<8	<8	<4	<8
N-Butylbenzenesulfonamide	µg/L	<8	<8	<4	<8
3-tert-Butylphenol	µg/L	<24	<24	<12	<24
Caffeine	µg/L	<8	<8	<4	<8
tris-2-Chloroethyl phosphate	µg/L	<8	<8	<4	<8
Cholesterol	µg/L	<64	<64	<32	<64
o-Cresol (2-Methylphenol)	µg/L	<8	<8	<4	<8
Cyclododecane	µg/L	<8	<8	<4	<8
Decamethylcyclopentasiloxane	µg/L	<8	<8	<4	<8
Decanoic acid	µg/L	<16	<16	<8	<16
2,6-Di-t-butyl-1,4-benzoquinone	µg/L	<8	<8	<4	<8
2,4-Di-t-butylphenol	µg/L	<8	<8	<4	<8
1,4 Diacetylbenzene	µg/L	<8	<8	<4	<8
N,N-Dibutylformamide	µg/L	<8	<8	<4	<8
Dibutyl phthalate	µg/L	<8	<8	<4	<8
Dibutylamine	µg/L	<8	<8	<4	<8
N,N-Diethyl-m-toluamide	µg/L	<8	<8	<4	<8

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
Diethylphthalate	µg/L	<8	<8	<4	<8
Diethylene glycol monoethyl ether	µg/L	<8	<8	<4	<8
N,N-Diethylformamide	µg/L	<24	<24	<12	<24
Diiodomethane (Methyl iodide)	µg/L	<8	<8	<4	<8
Diisopropyl adipate	µg/L	<8	<8	<4	<8
Dimethyl phthalate	µg/L	<8	<8	<4	<8
N,N-Dimethyl acetamide	µg/L	<8	<8	<4	<8
N,N-Dimethylbenzylamine	µg/L	<8	<8	<4	<8
N,N-Dimethylformamide	µg/L	<16	<16	<8	<16
Dipropylene glycol methyl ether	µg/L	<8	<8	<4	<8
Dodecamethylcyclohexasiloxane	µg/L	<8	<8	<4	<8
2-Ethoxyethanol	µg/L	<8	<8	<4	<8
2-Ethyl-1-hexanol	µg/L	<8	<8	<4	<8
2-Ethylhexanoic acid	µg/L	<8	<8	<4	<8
bis-2-Ethylhexyl adipate	µg/L	<8	<8	<4	<8
bis-2-Ethylhexyl phthalate (Dioctyl phthlate)	µg/L	<8	<8	<4	<8
4-Ethylmorpholine	µg/L	<8	<8	<4	<8
1-Formylpiperidine	µg/L	<8	<8	<4	<8
Heptanoic acid	µg/L	<8	<8	<4	<8
2-Heptanone	µg/L	<8	<8	<4	<8
gamma-Hexalactone	µg/L	<8	<8	<4	<8
Hexanoic acid	µg/L	<16	<16	<8	<16
2-Hexanol	µg/L	<8	<8	<4	<8
2-Hydroxybenzothiazole	µg/L	<8	<8	<4	<8
Ibuprofen	µg/L	<8	<8	<4	<8
Iodoform	µg/L	<8	<8	<4	<8
Isophorone	µg/L	<8	<8	<4	<8
4-Isopropylphenol	µg/L	<8	<8	<4	<8
Lauramide	µg/L	<8	<8	<4	<8
Lauric acid (Dodecanoic acid)	µg/L	<240	<240	<120	<240
p-Menth-1-en-8-ol (alpha-Terpineol)	µg/L	<8	<8	<4	<8
2-Mercaptobenzothiazole	µg/L	<80	<80	<40	<80
2-Methyl-2,4-pentanediol	µg/L	<8	<8	<4	<8
1-Methyl-2-pyrrolidinone	µg/L	<8	<8	<4	<8
Methyl-4-hydroxybenzoate	µg/L	<8	<8	<4	<8
Methyl sulfone	µg/L	<8	<8	<4	<8
2-Methyl butyric acid	µg/L	<24	<24	<12	<24
2-Methylthiobenzothiazole	µg/L	<8	<8	<4	<8
Monomethyl phthalate	µg/L	<8	<8	<4	<8
Myristic acid	µg/L	<48	<48	<24	<48
(+)-Neomenthol	µg/L	<8	<8	<4	<8
Nicotine	µg/L	<8	<8	<4	<8
Nonadecane	µg/L	<8	<8	<4	<8
Nonanoic acid	µg/L	<24	<24	<12	<24

#Acetone slightly above cal curve (estimated concentration)
NA=Not analyzed;
MI=Matrix interference
SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
1-Octadecanol	µg/L	<24	<24	<12	<24
Octamethylcyclotetrasiloxane	µg/L	<8	<8	<4	<8
Octanoic acid	µg/L	<16	<16	<8	<16
4-tert-Octylphenol	µg/L	<8	<8	<4	<8
Oleic acid	µg/L	<80	<80	<40	<80
Oxindole	µg/L	<8	<8	<4	<8
Palmitic acid	µg/L	<240	<240	<120	<240
Palmitoleic acid	µg/L	<200	<200	<100	<200
Pentacosane	µg/L	<8	<8	<4	<8
sec-Phenethyl alcohol	µg/L	<8	<8	<4	<8
Phenol	µg/L	<8	<8	<4	<8
2-Phenoxyethanol	µg/L	<8	<8	<4	<8
N-Phenyl-2-naphthylamine	µg/L	<8	<8	<4	<8
2-Phenyl-2-propanol	µg/L	<8	<8	<4	<8
2-Phenylacetic acid	µg/L	<32	<32	<16	<32
Phenethyl alcohol	µg/L	<8	<8	<4	<8
2-Phenylphenol	µg/L	<8	<8	<4	<8
Salicyclic Acid	µg/L	<64	<64	<32	<64
trans-Squalene	µg/L	<16	<16	<8	<16
Stearic acid	µg/L	<200	<200	<100	<200
1-Tetradecanol	µg/L	<8	<8	<4	<8
Tetramethylsuccinonitrile	µg/L	<8	<8	<4	<8
Tetramethyl thiourea	µg/L	<8	<8	<4	<8
Tetramethylurea	µg/L	<8	<8	<4	<8
Thymol	µg/L	<8	<8	<4	<8
1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	µg/L	<8	<8	<4	<8
Tributylamine	µg/L	<8	<8	<4	<8
Tributyl phosphate	µg/L	<8	<8	<4	<8
Triethyl phosphate	µg/L	<16	<16	<8	<16
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	µg/L	<16	<16	<8	<16
Tripropylene glycol monomethyl ether	µg/L	<8	<8	<4	<8
Undecanoic acid	µg/L	<48	<48	<24	<48
2-Undecanone	µg/L	<8	<8	<4	<8
Valeric acid (Pentanoic acid)	µg/L	<48	<48	<24	<48
Vanillin	µg/L	<16	<16	<8	<16
Acid Extractables-EPA 625 List					
4-Chloro-3-methylphenol	µg/L	<16	<16	<8	<16
2-Chlorophenol	µg/L	<16	<16	<8	<16
2,4-Dichlorophenol	µg/L	<16	<16	<8	<16
2,4-Dimethylphenol	µg/L	<16	<16	<8	<16
2,4-Dinitrophenol	µg/L	<16	<16	<8	<16
2-Methyl-4,6-dinitrophenol	µg/L	<16	<16	<8	<16
2-Nitrophenol	µg/L	<16	<16	<8	<16

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SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
4-Nitrophenol	µg/L	<16	<16	<8	<16
Pentachlorophenol	µg/L	<16	<16	<8	<16
Phenol	µg/L	<8	<8	<4	<8
2,4,5-Trichlorophenol	µg/L	<16	<16	<8	<16
2,4,6-Trichlorophenol	µg/L	<16	<16	<8	<16
Base/Neutral Extractables - EPA 625 List					
Benzidine	µg/L	<16	<16	<8	<16
3,3-Dichlorobenzidine	µg/L	<16	<16	<8	<16
bis-(2-Ethylhexyl)phthalate	µg/L	<8	<8	<4	<8
Benzyl butyl phthalate	µg/L	<8	<8	<4	<8
Dibutylphthalate	µg/L	<8	<8	<4	<8
Diethylphthalate	µg/L	<8	<8	<4	<8
Dimethylphthalate	µg/L	<8	<8	<4	<8
Di-n-octyl phthalate	µg/L	<16	<16	<8	<16
N-Nitrosodimethylamine	µg/L	<16	<16	<8	<16
N-Nitrosodiphenylamine	µg/L	<16	<16	<8	<16
N-Nitrosodi-n-propylamine	µg/L	<16	<16	<8	<16
2,4-Dinitrotoluene	µg/L	<16	<16	<8	<16
2,6-Dinitrotoluene	µg/L	<16	<16	<8	<16
Isophorone	µg/L	<8	<8	<4	<8
Nitrobenzene	µg/L	<16	<16	<8	<16
Acenaphthene	µg/L	<16	<16	<8	<16
Acenaphthylene	µg/L	<16	<16	<8	<16
Anthracene	µg/L	<16	<16	<8	<16
Benzo(a)anthracene	µg/L	<16	<16	<8	<16
Benzo(a)pyrene	µg/L	<10	<10	<5	<10
Benzo(b)fluoranthene	µg/L	<8	<8	<4	<8
Benzo(ghi)perylene	µg/L	<10	<10	<5	<10
Benzo(k)fluoroanthene	µg/L	<8	<8	<4	<8
Chrysene	µg/L	<20	<20	<10	<20
Dibenzo(a,h)anthracene	µg/L	<10	<10	<5	<10
Fluoranthene	µg/L	<8	<8	<4	<8
Fluorene	µg/L	<16	<16	<8	<16
Indeno(1,2,3-cd)pyrene	µg/L	<10	<10	<5	<10
Naphthalene	µg/L	<40	<40	<20	<40
Phenanthrene	µg/L	<8	<8	<4	<8
Pyrene	µg/L	<8	<8	<4	<8
bis(2-Chloroethyl) ether	µg/L	<16	<16	<8	<16
bis(2-Chloroethoxy) methane	µg/L	<16	<16	<8	<16
bis(2-Chloroisopropyl) ether	µg/L	<16	<16	<8	<16
4-Bromophenyl phenyl ether	µg/L	<16	<16	<8	<16
4-Chlorophenyl phenyl ether	µg/L	<16	<16	<8	<16
2-Chloronaphthalene	µg/L	<16	<16	<8	<16

#Acetone slightly above cal curve (estimated concentration)
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Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
1,2-Dichlorobenzene	µg/L	<16	<16	<8	<16
1,3-Dichlorobenzene	µg/L	<16	<16	<8	<16
1,4-Dichlorobenzene	µg/L	<16	<16	<8	<16
Hexachlorobenzene	µg/L	<16	<16	<8	<16
Hexachlorobutadiene	µg/L	<16	<16	<8	<16
Hexachlorocyclopentadiene	µg/L	<16	<16	<8	<16
Hexachloroethane	µg/L	<16	<16	<8	<16
1,2,4-Trichlorobenzene	µg/L	<16	<16	<8	<16
Alcohols (DAI/GC/MS)					
1-Butanol	µg/L	<100	<100	<100	<100
2-Butanol	µg/L	<100	<100	<100	<100
Ethanol	µg/L	<100	<100	<100	<100
Methanol	µg/L	<100	<100	<100	<100
2-Methyl-1-butanol	µg/L	<100	<100	<100	<100
2-Methyl-2-butanol	µg/L	<100	<100	<100	<100
3-Methyl-1-butanol (Isopentanol)	µg/L	<100	<100	<100	<100
2-Methyl-1-propanol	µg/L	<100	<100	<100	<100
2-Methyl-2-propanol	µg/L	<100	<100	<100	<100
1-Pentanol (Amyl alcohol)	µg/L	<100	<100	<100	<100
2-Pentanol (sec-Amyl alcohol)	µg/L	<100	<100	<100	<100
3-Pentanol	µg/L	<100	<100	<100	<100
1-Propanol	µg/L	<100	<100	<100	<100
2-Propanol (Isopropanol)	µg/L	<100	<100	<100	<100
Glycols (DAI/GC/MS)					
1,2-Ethanediol (Ethylene glycol)	µg/L	<1000	<1000	<1000	<1000
1,2-Propanediol (Propylene glycol)	µg/L	<500	<500	<500	<500
Carboxylates (CE)					
Acetate	µg/L	<125	<125	<125	<125
Formate	µg/L	<125	<125	<125	<125
Glycolate	µg/L	<125	<125	<125	<125
Glyoxylate	µg/L	<125	<125	<125	<125
Lactate	µg/L	<1000	<1000	<1000	<1000
Oxalate	µg/L	<125	<125	<125	<125
Propionate	µg/L	<125	<125	<125	<125
Aldehydes					
Formaldehyde	µg/L	22	16	23	28

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NA=Not analyzed;
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SWEG - 1000 days (11-2008)

Appendix 4. ISS WPA RIP and PWD Summary for Expeditions 18 through 20

Mission		ISS 15A/Exp. 18			Soyuz 17/Exp. 18
Sample Location		WPA RIP	WPA PWD Aux Port	WPA RIP after reconfig	WPA RIP
Sample Description		Processed Water	Processed Water	Processed Water	Processed Water
Sample Date		25-Mar-2009	25-Mar-2009	25-Mar-2009	02-Apr-2009
Analysis/Sample ID	Units	20090330015	20090330016	20090330018	20090419001
Amines (CE)					
Ethylamine	µg/L	<125	<125	<125	<125
Methylamine	µg/L	<125	<125	<125	<125
n-Propylamine	µg/L	<125	<125	<125	<125
Trimethylamine	µg/L	<125	<125	<125	<125
Non-volatiles (LC/UV-VIS)					
Urea	µg/L	<800	<800	<800	<800
Caprolactam	µg/L	<8	<8	<4	<8
Organic Carbon Recovery	percent	10.35	5.42	12.60	14.4
Unaccounted Organic Carbon	mg/L	0.08	0.11	0.06	0.09

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